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ARVINMERITOR / ROCKWELL

MOTION & RELEVANT EXHIBITS

STUCKART v. AC+S

LEPORE v. AC+S

H+T / S. GILSON

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SUPERIOR COURT OF CALIFORNIA

COUNTY OF SAN FRANCISCO – UNLIMITED JURISDICTION

GERALDINE BIERNER LEPORE, Individually and as Successor-in-Interest to GENE LEPORE, Decedent; KRISTIN MARIE REINHOLZ; MICHAEL JAMES LEPORE; and DOES ONE through TEN, inclusive, Plaintiffs, vs. AC AND S, INC., et al., Defendants.	Case No.: CGC-09-275411 **PLAINTIFFS' OPPOSITION TO DEFENDANT ARVINMERITOR, INC.'S MOTION FOR SUMMARY ADJUDICATION OF ISSUES; PLAINTIFFS' SEPARATE STATEMENT; PLAINTIFFS' RESPONSE TO DEFENDANT'S SEPARATE STATEMENT; DECLARATION OF SARAH GILSON, ESQ.** Date: July 17, 2012 Time: 9:30 a.m. Dept.: 503 Judge: Hon. Teri L. Jackson Complaint filed: November 19, 2009 Trial Date: September 24, 2012

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II. STATEMENT OF FACTS

A. Rockwell Knew Of The Hazards Of Asbestos Since The 1960s And Did Not Warn The Public Until The 1980s

While Rockwell plays coy in terms of when it first acquired knowledge, Rockwell admits it learned of the hazards of asbestos sometime in the 1960s. (See Rockwell's Responses to GO 129 Standard Friction Interrogatories at 24:22-27, attached to the Declaration of Sarah Gilson ("Gilson Decl.") as **Exhibit A**.) By the 1960s, ArvinMeritor "knew that workers exposed to asbestos dust were at risk of developing disease." (See *Bankhead v. ArvinMeritor*, 205 Cal.App.4th 68, attached to the Gilson Decl. as **Exhibit B**.)

In 1973, Rockwell sent letters to Abex and other manufacturing companies with a copy of a grievance filed by its local union concerning the amount of dust on and around the brake linings being sent to Rockwell factories by suppliers. (See January 1973 grievance and letters, attached to the Gilson Decl. as **Exhibit C**.) The grievance complained of the "serious health hazard" posed by the asbestos dust to Rockwell's employees. (Id.)

Concurrently, at the 1973 Asbestos Study Committee meeting of the Friction Materials Standards Institute, of which Abex, Bendix, Carlisle, and other major asbestos friction materials manufacturers were members and attended, the manufacturers expressed their concern with not the direct cost of labeling their asbestos products as such, but the "indirect cost of the customer reaction to the warning label." (See FMSI Meeting Minutes, p. 2, attached to the Gilson Decl. at **Exhibit D**.) The overriding concern in the friction industry at the time was that customers would purchase linings from companies who did not warn, thereby giving an unfair economic advantage to those manufacturers who remained silent. (Id.) This evidences the financial motivation that friction companies, such as ArvinMeritor, were feeling to withhold information about asbestos hazards from the consuming public and sets forth the context in which ArvinMeritor's decision not to warn customers about asbestos must be considered. (Id.)

In July 1974 Rockwell implemented an inspection protocol for incoming brake lining materials because of the "possible health hazard cause by excessive asbestos dust". (See Rockwell Internal Letter "Lining Dust in Blocks as Received- Health Hazard", attached to the Gilson Decl. as **Exhibit E**.)

In March 1976, an industrial hygiene survey of Rockwell's brake plant in Ashtabula, Ohio was taken to test airborne asbestos levels specifically and to determine the extent of the "potential health hazard." (See Clayton Industrial Hygiene Survey, attached to the Gilson Decl. as **Exhibit F.**) The survey recommended the use of exhaust ventilators on the equipment reworking brake materials and commended the use of ventilators by Rockwell's staff. (Id.) The survey also discussed the correlation between exposure to asbestos and mesothelioma. (Id.)

Immediately thereafter, in May of 1976, Rockwell's Supervisor for Safety and Health Elona Hoffman, RN addressed the "serious problems" of employee protective gear, respirator use, fiber drift and disposal of asbestos dust reported in the March survey. (See Rockwell Internal Letter "Re: Clayton Report", attached to the Gilson Decl. as **Exhibit G.**)

In 1978, eight years before it even mentioned the risk of cancer to product users, Ms. Hoffman on behalf of Rockwell received notice from counsel for a former Rockwell employee who had been diagnosed with "pleural mesothelioma, a form of cancer which is unique to asbestos exposure" that litigation was being undertaken on behalf of the employee as against the manufacturers of asbestos brake linings used by Rockwell. (See Letter to Elona Hoffman, attached to the Gilson Decl. as **Exhibit H.**) In response, Ms. Hoffman sent counsel a list of suppliers of the asbestos brake linings in Rockwell products. (See Letter from Elona Hoffman, attached to the Gilson Decl. as **Exhibit I.**)

In April 1979, after a further Ashtablua facility inspection, a Rockwell internal memorandum recommended that brake assemblies and linings formerly transported and sold loose in tubs should be totally enclosed and labeled "because the possibility of generating asbestos fibers during shipment is very real." (See Rockwell Internal Letter "Asbestos", attached to the Gilson Decl. as **Exhibit J.**) This precaution and the risk of exposure to asbestos from merely transporting or handling brake products were never passed on to end users, however.

In June 1979, Ms. Hoffman wrote to all supervisors at Rockwell about asbestos handling procedures, including mandatory vacuuming of workspace floors and empty lining boxes and the prohibition of compressed air or sweeping for cleaning up asbestos dust. (See Notice of Procedure and Rockwell Internal Letter "Review: Asbestos Handling Procedure" attached to the Gilson Decl. as **Exhibit K**.)

In 1982 Johns-Manville sent Rockwell a letter urging Rockwell, like General Motors, to publicize its "policy towards asbestos" as "emotionalism has tended to skew rational direction" on the asbestos issue. (See Rockwell Internal Letter "Johns-Manville-Response to Asbestos" and attachments, attached to the Gilson Decl. as **Exhibit L**.) Mr. Ronald Wissink, who received the letter at Rockwell, forwarded it on within the company, stating that he had not understood that Rockwell *had* a corporate position on asbestos although as a plant they stipulated the use of non-asbestos products in construction materials and in furnaces. (Id.) Rockwell discussed the Johns-Manville letter internally in September 1982, and stated that they had not yet developed a formal policy regarding the use of asbestos in their facilities or in their products. (See Rockwell Internal Letter "Response to Johns-Manville- Rockwell Asbestos Policy", attached to the Gilson Decl. as **Exhibit M**.)

In the early 1980s, Rockwell claims it began using a meaningless and weak statement which said "Caution: Contains asbestos fibers, avoid creating dust. Breathing asbestos dust may cause serious bodily harm." (See Deposition of Bruce Ketcham, PMQ ArvinMeritor, Inc., taken September 30, 2012 in *Bankhead v. Allied Packing & Supply* at 163:11-164:8, attached to the Gilson Decl. as **Exhibit N**.) It did not use the word "warning". (Id.) It did not mention the word "cancer". (Id.) It did not describe any of the appropriate methods or materials to be used to avoid creating or breathing asbestos dust. (Id.)

In September 1986, nearly two decades after Rockwell first became aware of the hazards of asbestos, Rockwell began labeling the brake assemblies it sold with asbestos linings to read: "DANGER / CONTAINS ASBESTOS FIBERS/ AVOID CREATING DUST/ CANCER AND LUNG DISEASE HAZARD" (See Rockwell Internal Letter "New Asbestos Standard-Labeling", attached to the Gilson Decl. as **Exhibit O**.) The label still did not recommend the use of ventilators, vacuums, or explain that dust could be found in the empty boxes in which the products were shipped, all three issues of which Rockwell was well aware by 1986. (Id.) The label still did not advise how to "avoid creating dust". (Id.)

Rockwell continued selling asbestos-containing products until the year 2000. (See Deposition of Bruce Ketcham, PMQ ArvinMeritor, Inc., taken September 30, 2012 in *Bankhead v Allied Packing & Supply* at 16:14-17:2, attached to the Gilson Decl. as **Exhibit N.**)

The decedent Gene Lepore was exposed to asbestos from Rockwell brakes after Rockwell admits it knew of the hazards of asbestos and before Rockwell began warning about asbestos hazards or the content of its asbestos brake parts. From 1974 until the mid-1980s, he worked at Port Hueneme in the Employee Development Dept., where he would coordinate training for the civilians, including mechanics in the Construction Equipment Department (CED). (See Plaintiffs' Video Direct of Gene Lepore, Vol. I, pp. 24:16-25:9; 25:23-27:4; 28:11-23, attached to the Gilson Decl. as **Exhibit P.**) Mr. Lepore spent significant time at CED, at least every other day, often daily. The mechanics were frequently performing repair and maintenance work in his presence. The mechanics did not stop work because he was there. (Id. at 36:9-17; 43:21-45:4.; see also Deposition of Donald Bangs, Vol. V, taken February 21, 2012, pp.928:10-14, attached to the Gilson Decl. at **Exhibit Q**.)

Co-worker Tony Villegas recalled that working with Rockwell axles from the 1960s to 1980s in CED. He also recalled Mr. Lepore being present for this work. (See Deposition of Antonio Villegas, Vol. V, taken March 8, 2012, pp.838:11-13; 838:24-839:5; 839:21-25; 840:19-23; 841:9-842:16, attached to the Gilson Decl. at **Exhibit R**.) He arced Rockwell brand brakes while decedent was around "a lot" (Id. at 981:18-982:10.)

Co-worker Donald Bangs identified Rockwell brake linings as a brand of brakes used on forklifts in the CED in buildings 813 and 1191 by all mechanics, including himself, during the 1960s, 70s, and 1980s. (See Deposition of Donald Bangs, Vol. I, taken January 10, 2012, pp.60:12-17; 60:24-61:20; 61:24-62:15, attached to the Gilson Decl. at **Exhibit S.**) He recalled Mr. Lepore being around for this work. (Id.). Another co-worker, Mr. Bailey, a general supply specialist at Port Hueneme from June 1974 until August 2003, recalled purchasing Rockwell parts for the CED. (See Deposition of Robert Bailey, Vol. I, taken April 28, 2010, pp. 16:6-19:23; attached to the Gilson Decl. as **Exhibit T**; see also Deposition of Robert Bailey, Vol. IV, taken June 29, 2011, pp. 763:16-23; 764:2-9; attached to the Gilson Decl. as **Exhibit U.**)

Mr. Lepore died in 2010 as a result of mesothelioma, which Rockwell knew was "a form of cancer which is unique to asbestos exposure" since 1978. (See Gilson Decl. at ¶ 23; see also Letter to Elona Hoffman, attached to the Gilson Decl. as **Exhibit H**)

B. **The California Court Of Appeals Upheld An Award Of 4.5 Million Dollars In Punitive Damages Against ArvinMeritor Based On This Same Evidence**

This issue has been fully litigated. In *Bankhead v. ArvinMeritor*, 205 Cal. App.4th 68, ArvinMeritor appealed a punitive damages award of 4.5 million dollars to the family of former mechanic Gordon Bankhead, who died of mesothelioma from exposure to asbestos products, including Rockwell brakes, on the grounds that such an award was excessive. (See *Bankhead v. ArvinMeritor*, attached to the Gilson Decl. as **Exhibit B.**) The award by the jury was based on the evidence presented above, which were all trial exhibits to the *Bankhead* case. (See Gilson Decl. at ¶ 24; see also **Exhibits C, E** through **O** thereto) The Court of Appeals summarized the facts relating to ArvinMeritor's liability as follows:

> "By the 1960's, ArvinMeritor knew that workers exposed to asbestos dust were at risk of developing asbestos-related diseases. Indeed, in 1973 and again in 1975, it wrote letters to Abex and other manufacturers complaining about the presence of asbestos dust in the brake linings it was receiving from them. Nonetheless, ArvinMeritor did not place any warnings on its products until the early 1980's, and continued to market asbestos-containing brakes until its inventory of them was exhausted sometime in the early 1990's. Not until the fall of 1987 did ArvinMeritor include an express reference to cancer in the warnings on its products."

(See *Bankhead v. ArvinMeritor*,205 Cal.App.4th 68, attached to the Gilson Decl. as **Exhibit B**.)

At trial ArvinMeritor was held jointly and severally liable for 1.47 million dollars in economic damages. severally liable for $375,000 of noneconomic damages, and responsible for $4.5 million dollars in punitive damages. (Id.) The trial court denied both ArvinMeritor's motions for a new trial and for judgment notwithstanding the verdict. (Id.) ArvinMeritor appealed, arguing that the award of punitive damages was excessive both based on its financial standing and as a violation of due process. (Id.)

The Court of Appeals upheld the award after examining the reprehensibility of ArvinMeritor. (Id.) Citing *Boeken v. Phillip Morris Inc.* (2005) 127 Cal.App.4th 1640, 1690, the Court stated "intentionally marketing a defective product knowing that it might cause injury and death is 'highly reprehensible.'" (Id.) It further held that ArvinMeritor's conduct "evinced an indifference to or reckless disregard of the health and safety of [plaintiff] and those similarly situated." (Id.) It determined that "limiting the award in this case would undermine the purpose of punitive damages by giving undue credit to ArvinMeritor's belated efforts to warn users of its products about the hazards of asbestos, which the jury implicitly found were ineffective and inadequate." (Id.)

III. LEGAL ARGUMENT

A. <u>This Is A Matter of Collateral Estoppel</u>

ArvinMeritor is estopped from further litigating this matter. The *Bankhead* jury held that ArvinMeritor was liable for Mr. Bankhead's injuries, and additionally liable for punitive damages. The trial court denied ArvinMeritor's motions for a new trial and for a decision notwithstanding the verdict. The Court of Appeals reviewed the punitive damage award as an "important part of the procedural due process to which a defendant subject to punitive damages is entitled under both the state and federal constitutions." *Bankhead*, 205 Cal. App. 4th at 77. It determined that:

> "The jury was justified by the evidence in concluding that an award of that magnitude was necessary and appropriate in order to punish ArvinMeritor for its contribution to causing the disease that took [Plaintiff's] life, and to deter ArvinMeritor and other manufacturers from failing to take every available precaution to mitigate workers' exposure to life-threatening toxic substances."

Id. at 84.

The issue of whether ArvinMeritor has been guilty of oppression, fraud or malice in failing to warn consumers of the hazards of its asbestos products was "necessarily decided" in the course of the *Bankhead* decision, *supra*. The mere fact that the Court of Appeals upheld the trial court's judgment awarding punitive damages means that this issue was necessarily decided by the jury.

Any attempt to re-litigate this issue is a violation of the doctrine of collateral estoppel. The doctrine of collateral estoppel applies (1) if the issue decided in the previous action is identical with the one presented in this case; (2) if there was a final judgment on the merits; and (3) if ArvinMeritor was a party to that action. *First NBS Corporation v. Donlon Gabrielson* (2009) 179 Cal. App. 3d 1189, 1194.

Both the *Bankhead* case and this case involve the same pivotal issue: ArvinMeritor's knowledge of the hazards of asbestos in the 1960s, 1970s and 1980s, its failure to warn customers about the asbestos content of its products through the 1980s and its continued sales of asbestos products through 2000. The underlying facts and findings are identical, and this is critical to the collateral estoppel analysis: "Collateral estoppel depends on whether the issue in both actions is the same, not whether the issue arises in the same context." *Id.* at 1196.

There is no way that the jury could have awarded punitive damages had it not found that ArvinMeritor was guilty of fraud, malice or oppression. There is no way that the trial court could have denied ArvinMeritor's motions for directed verdict and for a new trial if it did not agree. Indeed, the *Bankhead* trial court and appellate court both examined the very same evidence now before this Court, and determined that ArvinMeritor was not only deserving of punitive damages, but that the reprehensibility of its behavior merited a significant damages award:

> "In the present case, Bankhead contracted a painful cancer, and ultimately died, due to ArvinMeritor's (and the other defendants') failure to ensure that people like Bankhead who used or worked with asbestos-containing products were not exposed to lethal asbestos dust. ArvinMeritor's conduct continued over many years, and evinced an indifference to or reckless disregard of the health and safety of Bankhead and those similarly situated.
>
> *Bankhead, supra* at 85-86.

In *Bankhead*, ArvinMeritor argued that its conduct was not sufficiently reprehensible to justify a finding of punitive damages. The Appellate Court rejected this and found that all of the factors enunciated in the *State Farm Mutual Automobile Insurance Company v. Campbell* (2003) 538 U.S. 408 militated in favor of a punitive damage finding. Citing *Boeken v. Phillip Morris Inc.* (2005) 127 Cal.App.4th 1640, 1690, the Court stated "intentionally marketing a defective product knowing that it might cause injury and death is 'highly reprehensible.'" *Bankhead, supra* at 85. The Court further cited *Philip Morris USA v. Williams* (2007) 549 U.S. 346, 355 for the proposition that "evidence of actual harm to non-parties can help show that the conduct that harmed the plaintiffs also posed a substantial risk of harm to the general public, and so was particularly reprehensible." *Id.* at 86.

In response to ArvinMeritor's argument that it did not even know of the existence of Bankhead or any particular plaintiff, the Court stated that:

> [W]hile there is no evidence that ArvinMeritor intended to injure Bankhead or anyone else in particular, its prolonged failure to take adequate measures to protect people who worked with its product against a known hazard to their health justifies the jury's conclusion that its conduct towards workers exposed to the hazards in its products was malicious, fraudulent or oppressive.
>
> *Id.* at 863.

From this it is clear that malice need not be directed at a particular plaintiff and as such, ArvinMeritor cannot distinguish the facts in *Bankhead* from those here. It is enough that the Defendant's conduct was directed to consumers as a whole. Numerous California cases have interpreted the term "malice" to include, not only a malicious intention to injure the specific person harmed, but conduct evincing "a conscious disregard of the probability that the actor's conduct will result in injury to others." *Grimshaw v. Ford Motor Company*, 119 Cal.App.3d 757, 808-810 (1981). The conscious disregard concept of malice does not limit an inquiry into the effect of the conduct on the plaintiff, the inquiry is directed at and is concerned with defendant's conduct affecting the safety of others. *Hilliard v. A. H. Robins Co.*, 148 Cal. App. 3d 374, 401 (Ct. App. 1983) Both Gordon Bankhead and Decedent Gene Lepore were members of this consumer class of workers whose safety was affected by ArvinMeritor's conduct.

The issue in the *Bankhead* action is identical to the issue here. ArvinMeritor cannot deny the fact that it was a party to the *Bankhead* case and that the matter was fully and finally adjudged. The collateral estoppel principal is based upon sound public policy of limiting litigation by preventing a party who has had one fair trial on an issue from again drawing it into controversy. ArvinMeritor has had a fair trial, one that withstood an appeal, and thus it should be precluded from re-litigating the issue of its liability for punitive damages on the identical evidence.

B. <u>A Triable Issue Of Fact Exists As To ArvinMeritor's Liability For Punitive Damages</u>

Should this Court choose not to rule on the basis of collateral estoppel, a triable issue still necessarily exists as to ArvinMeritor's liability for punitive damages. Where a trial court, a jury and the Court of Appeals has found that Plaintiffs' evidence, all of which were trial exhibits in the *Bankhead* case, supports an award of punitive damages, this Court cannot find that a triable issue of fact does not exist as to the identical issue.

Pursuant to Civil Code §3294(a), a plaintiff may recover punitive damages "where it is proven by clear and convincing evidence that the defendant has been guilty of oppression, fraud or malice." Fraud is defined as "an intentional misrepresentation, deceit or concealment of a material fact known to the defendant ... causing injury." (See Cal. Civ. Code §3294(c)(3).) Malice is "conduct which is intended by the defendant to cause injury to the Plaintiffs or despicable conduct which is carried on by the defendant with a willful and conscious disregard of the rights or safety of others." (See Cal. Civ. Code §3294(c)(1).) The adjective "despicable" describes conduct that is "so vile, base, contemptible, miserable, wretched, or loathsome that it would be looked down upon and despised by ordinary decent people." Whether or not Defendant's conduct is sufficiently "despicable" and "willful" to constitute malice is a factual question.

Marketing a product which is known to cause harm, for the purpose of maximizing profit, has been found to constitute just the kind of conscious disregard which justifies a finding of punitive damages (*See Bankhead, supra* ; *See Hilliard, supra* at 398, "defendant acted with conscious disregard of the rights or safety of others, it was aware of the probable dangerous consequences of its conduct, and the defendant willfully and deliberately failed to avoid these consequences"; *see also Grimshaw, supra.*)

The decision not to warn consumers about the hazards of its products must be considered in the context of the 1973 Asbestos Study Committee meeting in which the friction industry expressed concern that customers would purchase more linings from companies who did not warn, thereby giving an unfair economic advantage to those manufacturers who remained silent. (See FMSI Meeting Minutes, p. 2, attached to the Gilson Decl. at **Exhibit D**.) ArvinMeritor's financial motivation to withhold information about asbestos hazards from the consuming public is evident.

Here, ArvinMeritor knew that asbestos was hazardous to human health from the 1960s onward. It knew that the inhalation of asbestos dust posed a serious risk to human health, and it actively regulated its plants and facilities to prevent the exposure of employees. It required the use of ventilators and protective clothing and it mandated the use of vacuums and prohibited the use of compressed air by its own staff. It repeatedly scolded its asbestos parts suppliers for the amount of asbestos dust in the boxes of linings it received and it was acutely aware of OSHA regulations, legislative efforts and the emergence of asbestos-related litigation throughout the 1970s.

Nevertheless, with all this information, ArvinMeritor took what it knew to be a dangerous product, made it part of an assembly, and sold this assembly without a word of warning knowing full well that end users and mechanics such as Mr. Bankhead and Mr. Lepore would be exposed to the dust. ArvinMeritor didn't tell its customers that they were buying an asbestos part. It didn't tell customers to avoid dust from its linings, and it didn't tell customers that absent using vacuums, a respirator and protective clothing, they were at risk for developing cancer. For decades ArvinMeritor failed to take any measures to protect the public from a known hazard.

Only in 1986 did ArvinMeritor ever purport to warn its customers of the danger of developing cancer from its products, and even then it did not tell its customers to use the strict dust-suppression methods that ArvinMeritor itself had required for its employees for over a decade, such as vacuums and respirators. It didn't pass on the concerns about dusty boxes it had expressed internally for almost 15 years. It sold its defective and hazardous asbestos-containing brake products until the year 2000. ArvinMeritor sold the public what it knew to be hazardous products for over 40 years.

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IV. CONCLUSION

ArvinMeritor's prolonged failure to take adequate measures to protect people who worked with its products against a known hazard to their health and safety justifies the award of punitive damages. This has been agreed upon by a jury, a trial court and the California Court of Appeals. This Court should likewise deny ArvinMeritor's Motion for Summary Adjudication.

DATED: July 3, 2012

HAROWITZ & TIGERMAN, LLP

By: ______________________________
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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN FRANCISCO

GERALDINE BIERNER LEPORE, Individually and as Successor-in-Interest to GENE LEPORE, Decedent; KRISTIN MARIE REINHOLZ; MICHAEL JAMES LEPORE; and DOES ONE through TEN, inclusive, Plaintiffs, vs. AC AND S, INC., et al., Defendants.	Case No.: CGC-09-275411 **DECLARATION OF SARAH E. GILSON IN SUPPORT OF PLAINTIFFS' OPPOSITION TO DEFENDANT ARVINMERITOR, INC.'S MOTION FOR SUMMARY ADJUDICATION OF ISSUES** Date: July 17, 2012 Time: 9:30 a.m. Dept.: 503 Judge: Hon. Teri L. Jackson Trial Date: September 24, 2012

I, SARAH E. GILSON, declare:

1. I am an attorney at law, duly licensed to practice before all Courts in the State of California. I am counsel of record for Plaintiffs herein. I make this Declaration of my own personal knowledge, and if called upon as a witness, I could and would testify competently thereto.

2. Attached hereto as **Exhibit A** is a true and correct copy of the relevant portions of Rockwell's Responses to GO 129 Standard Friction Interrogatories.

3. Attached hereto as **Exhibit B** is a true and correct copy of *Bankhead v. ArvinMeritor*, 205 Cal.App.4th 68.

4. Attached hereto as **Exhibit C** is a true and correct copy of the January 1973 grievance and letters.

5. Attached hereto as **Exhibit D** is a true and correct copy of the FMSI Meeting Minutes.

6. Attached hereto as **Exhibit E** is a true and correct copy of the Rockwell Internal Letter "Lining Dust in Blocks as Received- Health Hazard."

7. Attached hereto as **Exhibit F** is a true and correct copy of the Clayton Industrial Hygiene Survey.

8. Attached hereto as **Exhibit G** is a true and correct copy of the Rockwell Internal Letter "Re: Clayton Report."

9. Attached hereto as **Exhibit H** is a true and correct copy of the Letter to Elona Hoffman.

10. Attached hereto as **Exhibit I** is a true and correct copy of the Letter from Elona Hoffman.

11. Attached hereto as **Exhibit J** is a true and correct copy of the Rockwell Internal Letter "Asbestos."

12. Attached hereto as **Exhibit K** is a true and correct copy of the Notice of Procedure and Rockwell Internal Letter "Review: Asbestos Handling Procedure."

13. Attached hereto as **Exhibit L** is a true and correct copy of the Rockwell Internal Letter "Johns-Manville-Response to Asbestos."

14. Attached hereto as **Exhibit M** is a true and correct copy of the Rockwell Internal Letter "Response to Johns-Manville- Rockwell Asbestos Policy."

15. Attached hereto as **Exhibit N** is a true and correct copy of excerpts from the Deposition of Bruce Ketcham, PMQ ArvinMeritor, Inc., taken September 30, 2012 in *Bankhead v. Allied Packing & Supply* (the *Bankhead* case).

16. Attached hereto as **Exhibit O** is a true and correct copy of the Rockwell Internal Letter "New Asbestos Standard-Labeling."

17. Attached hereto as **Exhibit P** is a true and correct copy of excerpts from the Plaintiffs' Video Direct of Gene Lepore, Vol. I.

18. Attached hereto as **Exhibit Q** is a true and correct copy of excerpts from the Deposition of Donald Bangs, Vol. V.

19. Attached hereto as **Exhibit R** is a true and correct copy of excerpts from the Deposition of Antonio Villegas, Vol. V, taken March 8, 2012.

20. Attached hereto as **Exhibit S** is a true and correct copy of excerpts from the Deposition of Donald Bangs, Vol. I, taken January 10, 2012.

21. Attached hereto as **Exhibit T** is a true and correct copy of excerpts from the Deposition of Robert Bailey, Vol. I, taken April 28, 2010.

22. Attached hereto as **Exhibit U** is a true and correct copy of excerpts from the Deposition of Robert Bailey, Vol. IV, taken June 29, 2011.

23. Mr. Lepore died in 2010 as a result of mesothelioma

24. The evidence presented above as **Exhibits C**, and **E** through **O** were all trial exhibits to the *Bankhead* case.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this Declaration was executed on July 3, 2012, at San Francisco, California.

SARAH E. GILSON

EXHIBIT "A"

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ARVINMERITOR, INC.

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN FRANCISCO

IN RE: COMPLEX ASBESTOS LITIGATION	Case No. 828684 **DEFENDANT ARVINMERITOR, INC.'S AMENDED RESPONSES TO STANDARD INTERROGATORIES TO FRICTION DEFENDANTS PURSUANT TO GENERAL ORDER NO. 129**

PROPOUNDING PARTY: PLAINTIFFS

RESPONDING PARTY: DEFENDANT, ARVINMERITOR, INC.

SET NUMBER: ONE

COMES NOW defendant ArvinMeritor, Inc. ("ArvinMeritor"), successor-in-interest to the former automotive segment of Rockwell International Corporation ("Rockwell"), and gives its amended responses to Standard Interrogatories to Friction Defendants Pursuant to G.O. 129:

B. The year it was printed;

C. The period of time in which it was used;

D. The purpose of such document;

E. Whether the documents or copies of said documents presently exist;

F. If said documents or copies still exist, where they are located; and

G. The IDENTITY of the custodian of such documents.

RESPONSE TO INTERROGATORY NO. 32:

See general objections. ArvinMeritor also objects to this discovery request on the grounds that it is overbroad and unduly burdensome, vague and ambiguous, not relevant and not reasonably calculated to lead to the discovery of admissible evidence. Subject to the foregoing general objections, and without waiving same, ArvinMeritor responds: the answer to this discovery request may be ascertained from copies of the relevant brochures, pamphlets, catalogues, and advertisements, which will be made available for inspection and copying at the offices of ArvinMeritor's National Coordinating Counsel.

INTERROGATORY NO. 33:

When do YOU contend that THIS DEFENDANT first became aware that there is an association between asbestos exposure and disease in human beings?

RESPONSE TO INTERROGATORY NO. 33:

See general objections. ArvinMeritor also objects to this discovery request to the extent it seeks disclosure of information protected by applicable privileges and immunities, and on the grounds that it is overbroad and unduly burdensome, vague and ambiguous, not relevant and not reasonably calculated to lead to the discovery of admissible evidence, and calls for a legal conclusion. Subject to the foregoing general objections, and without waiving same, ArvinMeritor responds: it is not known how ArvinMeritor first became aware of the association between asbestos and certain diseases, other than by general reputation within the manufacturing sector of industry, U.S. government bodies, and general, periodic review of medical and scientific literature. ArvinMeritor was aware since at least some time in the 1960s of an association between exposure of certain types of workers to high levels of asbestos fiber, over long periods of time, and the disease of asbestosis.

ArvinMeritor has been aware that a causal time-dose relationship has been statistically shown, for certain susceptible individuals, between the inhalation of asbestos and bronchogenic cancer (chiefly among cigarette smokers) and, in the case of amphibole asbestos, mesothelioma. ArvinMeritor first became aware of these associations in the 1960s from general medical, scientific, and public press reports discussing these associations.

ArvinMeritor has been aware that certain authors have suggested that associations may exist between exposure to asbestos and certain other types of cancer, but they understand that the existence of these associations is the subject of dispute within the medical profession.

ArvinMeritor was not aware, however, until the late 1970s that some authors have associated the low levels of asbestos dust exposure involved in typical brake installation and repair work with asbestosis and cancer, and ArvinMeritor has continued to doubt such associations throughout the relevant period. ArvinMeritor believes that the relevant scientific evidence shows that occupational exposure to asbestos-containing brake linings does not cause asbestos-related disease of any kind. Asbestos-containing brake linings manufactured in the U.S. are known to have contained chrysotile fiber, not amphibole fiber. The weight of the scientific evidence establishes that milled or processed chrysotile fiber is not capable of causing mesothelioma, and can cause other asbestos-related diseases only at very high exposure levels. Industrial hygiene studies have shown that garage mechanics who work with brakes, or around others who work with brakes, are generally exposed to very low levels of airborne asbestos fibers. In addition, when these exposure levels are viewed on an eight-hour time-weighted-average basis, the exposure levels are well below the levels regarded as safe by the federal government and the scientific community.

In addition, the processes of grinding and braking break down most asbestos fibers into particles that are too short to qualify as fibers and that (especially because they are chrysotile) readily clear the lung. Finally, the process of braking produces heat at temperatures that convert chrysotile into forsterite, a substance that has not been shown to cause lung disease.

After diligent investigation, ArvinMeritor does not know the names of the individuals who first gained such knowledge on ArvinMeritor's part. ArvinMeritor is aware of an extensive body of published scientific and medical studies that inform and support its understanding. Copies of such studies will be made available to plaintiffs at a time and place to be agreed upon between the parties.

ArvinMeritor further responds: contentions can only be formulated when discovery is completed. At the present time, ArvinMeritor has not conducted discovery or made a review of discovery conducted by other parties. ArvinMeritor reserves the right to supplement this response upon completion of this review and of further discovery.

<u>**INTERROGATORY NO. 34:**</u>

How do YOU contend that THIS DEFENDANT first became aware that there is an association between asbestos exposure and disease in human beings?

<u>***RESPONSE TO INTERROGATORY NO. 34:***</u>

See general objections. ArvinMeritor also objects to this discovery request to the extent it seeks disclosure of information protected by applicable privileges and immunities, and on the grounds that it is overbroad and unduly burdensome, vague and ambiguous, not relevant and not reasonably calculated to lead to the discovery of admissible evidence, and calls for a legal conclusion. Subject to the foregoing general objections, and without waiving same, ArvinMeritor refers plaintiffs to its response to Interrogatory No. 33 and responds: contentions can only be formulated when discovery is completed. At the present time, ArvinMeritor has not

EXHIBIT "B"

205 Cal.App.4th 68
Court of Appeal, First District, Division 4, California.

Gordon BANKHEAD et al.,
Plaintiffs and Respondents,
v.
ARVINMERITOR, INC., Defendant and Appellant.

Nos. A131587, A132985. | April 19, 2012. | As Modified April 25, 2012.

Synopsis

Background: Automotive maintenance worker brought personal injury action against defendants including brake shoe manufacturer. The Superior Court, Alameda County, No. RG10502243, Robert B. Freedman, J., entered judgment on special jury verdict for worker, awarding economic, noneconomic, and punitive damages, and denied motions for judgment notwithstanding the verdict and for new trial. Brake shoe manufacturer appealed.

Holdings: The Court of Appeal, Ruvolo, P.J., held that:
[1] net worth is not the only measure of wealth that may be used to determine excessiveness of punitive damages;
[2] $4.5 million punitive damages award was not excessive in comparison to manufacturer's wealth; and
[3] $4.5 million punitive damages award was not excessive in violation of federal due process clause.

Affirmed.

Attorneys and Law Firms

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Opinion

RUVOLO, P.J.

*72 In this asbestos personal injury case, a jury found ArvinMeritor, Inc. (ArvinMeritor) liable to Gordon and Emily Bankhead [1] for compensatory and punitive damages. On appeal, ArvinMeritor does not challenge the jury's verdicts as to liability or the amount of compensatory damages. It contends only that the trial court erred in declining to reduce the amount of punitive damages awarded by the jury.

ArvinMeritor disputes the punitive damages award on two grounds: first, that the amount is excessive under California law in light of ArvinMeritor's financial condition, and in particular, the evidence that ArvinMeritor has a negative net worth; and second, that the ratio of punitive to compensatory damages is so high as to violate the due process clause of the United States Constitution, under the guidelines adopted by the United States Supreme Court.

As to the first contention, we hold that there is no legal requirement that punitive damages must be measured against a defendant's net worth. Here, there was expert testimony that ArvinMeritor's net worth was not a reliable indicator of its ability to pay punitive damages, and that other indicators in its financial data merited the amount of the award.

As to ArvinMeritor's second contention, we conclude that the 2.4–to–one ratio of punitive damages to compensatory damages awarded by the jury did not violate the federal due process clause of the Fourteenth Amendment, or the guidelines for making such awards as articulated by the United States Supreme Court.

Consequently, we affirm.

*73 FACTS AND PROCEDURAL BACKGROUND

As is required on review after a jury trial, in reciting the facts, we "resolv [e] ... all conflicts in the evidence and all legitimate and reasonable inferences that may arise therefrom in favor of the jury's findings and the verdict. [Citations.]" (*Weeks v. Baker & McKenzie* (1998) 63 Cal.App.4th 1128, 1137–1138, 74 Cal.Rptr.2d 510 (*Weeks*).) We give only a general summary of the facts relating to liability and compensatory damages, because the details are not germane to the issues presented by this appeal.

ArvinMeritor is the successor in interest to another company, Rockwell, [2] which manufactured brake shoes for installation on commercial trucks during the time frame involved in this case. The brake shoes were fitted with asbestos-containing linings that were manufactured by a number of other companies, including Pneumo Abex LLC (Abex), the respondent in a companion appeal to this one.[3]

**853 By the 1960's, ArvinMeritor knew that workers exposed to asbestos dust were at risk of developing asbestos-related diseases. Indeed, in 1973 and again in 1975, it wrote letters to Abex and other manufacturers complaining about the presence of asbestos dust in the brake linings it was receiving from them. Nonetheless, ArvinMeritor did not place any warnings on its products until the early 1980's, and continued to market asbestos-containing brakes until its inventory of them was exhausted sometime in the early 1990's. Not until the fall of 1987 did ArvinMeritor include an express reference to cancer in the warnings on its products.

Bankhead was exposed to asbestos dust from brake linings during the 30 years he worked at automotive maintenance facilities, primarily as a "parts *74 man," starting in 1965 and continuing through his retirement in 1999. As a result of this exposure, Bankhead contracted mesothelioma, a form of lung cancer, in 2009. Before his mesothelioma was diagnosed in January 2010, Bankhead experienced difficulty breathing, and underwent painful medical treatment to drain fluid from one of his lungs. After the diagnosis, Bankhead was told he only had 12 months to live,[4] and as his disease progressed, the quality of his life decreased significantly. At trial, Bankhead's medical experts testified that his condition would become increasingly painful until his inevitable death.

After Bankhead's mesothelioma was diagnosed, he sued numerous defendants, including ArvinMeritor and Abex. By the time the case went to trial, Bankhead had settled with all but four of the defendants. The jury found against all of the defendants as to liability, allocating fault 30 percent to each brake lining manufacturer (Abex and one other), 15 percent to each brake shoe manufacturer (ArvinMeritor and one other), and 10 percent to other defendants. The jury also found all defendants liable for punitive damages.

The jury calculated respondents' economic damages at $1.47 million, including Bankhead's medical expenses, lost earnings, and lost retirement benefits, and the value of the household services he had been providing before he became ill. It also awarded a total of $2.5 million in noneconomic damages for Bankhead's pain, suffering, and emotional distress, and his wife's loss of consortium. Based on its 15 percent share of fault, ArvinMeritor was held jointly and severally liable for the $1.47 million in economic damages, and severally liable for $375,000 of the noneconomic damages, for a total of $1.845 million.[5]

**854 A separate trial was held to determine the amount of punitive damages to be assessed against each defendant. By the time of that trial, all defendants except ArvinMeritor and Abex had settled. At the punitive damages trial, respondents presented an expert witness, Robert Johnson, to testify about ArvinMeritor's financial condition. In evaluating ArvinMeritor's economic status, Johnson reviewed publicly available documents filed with the Securities and Exchange Commission, including ArvinMeritor's 2008, 2009, and 2010 annual 10–K reports; its adjusted 2009 10–K reports; a 2010 proxy statement sent to shareholders; and data regarding its market capitalization. These are "generally accepted financial documents used and relied upon by economists or experts in finance to evaluate a company."

*75 Johnson testified that between 2006 and 2010, ArvinMeritor attained over $3 billion in sales revenue each year, and an average annual cash-flow profit of $111 million.[6] ArvinMeritor's lowest performing year during that period was 2009, but even in that year, it had $95 million in cash available to it. In 2010, ArvinMeritor's annual sales revenues reached $3.59 billion; its annual report indicated it had earned $211 million in cash-flow profit; and it reported to its shareholders that it had earned a $12 million net profit—a conservative figure, as Johnson explained, because companies seek to reduce their reported net income, using legally available deductions such as depreciation, in order to minimize their tax liability. At the end of 2010, ArvinMeritor had on hand some $343 million in cash and cash equivalents, and its outstanding stock had a total market value of almost $2 billion.

ArvinMeritor's chief executive officer, who also served as its board chair and corporate president, earned over $7.6 million in 2010, and stood to receive between $19.9 million and $26.9 million upon leaving the company. Johnson explained that a company's willingness and ability to pay sums of this magnitude to its chief executive is an indicator of financial strength. Given all of these facts, Johnson opined that ArvinMeritor is financially sound.

Johnson acknowledged that ArvinMeritor reported that as of 2010, it had a negative net worth of $1.023 billion. He opined, however, that this number, taken on its own, did not "reflect the full context of ArvinMeritor's financial condition and ability to pay." Johnson explained that net worth is only one of "a number of different tools that we use to assess a company's financial health, wealth and condition," and opined that "net worth is probably one of the least reliable financial metrics or statistics you can use," because there are "a number of financial or accounting transactions" in which a company can engage to lower its net worth, while remaining profitable. Johnson testified that net worth "is not a measure of a company's financial condition totally or their ability to pay," because "even within the guidelines of the generally accepted accounting principles ... net worth is something that can be pretty easily manipulated." As an example, Johnson noted **855 that a company can reduce its net worth simply by repurchasing shares of its stock.

Johnson explained that because net worth can be unreliable, banks look instead to a company's cash flow and profits, which are the most reliable indicators of its ability to repay debt, in determining whether to lend money to it. For this reason, companies with a negative net worth are still able to *76 borrow money. Indeed, ArvinMeritor itself borrowed a total of $245 million in 2010, and still had $539 million available on its line of credit as of September 30 of that year.

Johnson also acknowledged that over the past couple of years, ArvinMeritor had been "weathering ... the financial travails of the economy"; its sales had not gone up, and it had lost some money. He believed, however, that ArvinMeritor was "still a financially sound company" that was "able to meet all of its obligations," was "not anywhere near on the verge of bankruptcy," and had "generally turned the corner." In all but one year (2009) during the period Johnson considered (2006–2010), the company's losses resulted primarily from significant capital expenditures, as well as expenses for research and development.

ArvinMeritor's trial counsel cross-examined Johnson, but ArvinMeritor did not offer any expert witness or other evidence to cast doubt on Johnson's methodology or his conclusions. In its opening brief on appeal, ArvinMeritor cites various financial data taken from ArvinMeritor's 2010 annual report. However, though the report was entered into evidence, Johnson was not asked about those particular figures at trial, and they were not called to the attention of the jury.

The jury returned a verdict awarding respondents $4.5 million in punitive damages against ArvinMeritor. ArvinMeritor filed motions for judgment notwithstanding the verdict and for new trial. The trial court denied both motions, and this timely appeal ensued.

DISCUSSION

A. Amount of Punitive Damages Relative to Financial Condition

ArvinMeritor's first argument on appeal is that the punitive damages award is excessive under California law, primarily because of ArvinMeritor's negative net worth. ArvinMeritor argues that because of its financial condition, the award should be stricken altogether, or reduced to $300,000 at most.

1. Standard of Review

[1] [2] "In California, a trial court reviews a motion challenging the excessiveness of an award of punitive damages ... as a 'thirteenth juror': 'The trial court is in a far better position than an appellate court to determine whether a damage award was influenced by "passion or prejudice." [Citation.] In reviewing that issue, moreover, the trial court is vested with the power, denied to us, to *77 weigh the evidence and resolve issues of credibility. [Citation.]' [Citation.]" (*Boeken v. Philip Morris, Inc.* (2005) 127 Cal.App.4th 1640, 1689, 26 Cal.Rptr.3d 638 (*Boeken*).) In contrast, we, as an "appellate court[,] cannot reweigh the credibility of witnesses or resolve conflicts in the evidence. [Citation.] [We] must view the conflicting evidence regarding punitive damages in the light most favorable to the judgment pursuant to the familiar substantial evidence rule. [Citation.]" (*Rufo v. Simpson* (2001) 86 Cal.App.4th 573, 622, 103 Cal.Rptr.2d 492 (*Rufo*).)

[3] [4] Impartial review of a punitive damage award by an appellate court is an **856 important part of the procedural due process to which a defendant subject to punitive damages is entitled under both the state and federal constitutions. (*Pacific Mutual Life Insurance Co. v. Haslip* (1991) 499 U.S. 1, 15–16, 111 S.Ct. 1032, 113 L.Ed.2d 1; *Las Palmas Associates v. Las Palmas Center Associates* (1991) 235 Cal.App.3d 1220, 1256–1258, 1 Cal.Rptr.2d 301 (*Las Palmas*).) Appellate review for passion and prejudice provides defendants with an additional safeguard to ensure that the award does not exceed an amount necessary to accomplish the societal goals of punishment and deterrence (*Las Palmas, supra,* at p. 1257, 1 Cal.Rptr.2d 301.) Accordingly, we review an award of punitive damages to determine whether the award is excessive as a matter of law, or raises a presumption that it is the product of passion or prejudice.

[5] In so doing, we evaluate the award under three criteria: the nature of the defendant's wrongdoing; the actual harm to the plaintiff; and the defendant's wealth.[7] (*Neal v. Farmers Ins. Exchange* (1978) 21 Cal.3d 910, 928, 148 Cal.Rptr. 389, 582 P.2d 980 (*Neal*); see *Adams v. Murakami* (1991) 54 Cal.3d 105, 109–110, 284 Cal.Rptr. 318, 813 P.2d 1348 (*Adams*).) "An appellate court will not reverse the jury's determination unless the award as a matter of law is excessive or appears so grossly disproportionate to the relevant facters that it raises a presumption it was the result of passion or prejudice. [Citations.]" (*Rufo, supra,* 86 Cal.App.4th at p. 623, 103 Cal.Rptr.2d 492.)

2. Punitive Damages and Defendant's Wealth

[6] [7] [8] Under California law, "[w]ealth is an important consideration in determining the excessiveness of a punitive damage award. Because the purposes of punitive damages are to punish the wrongdoer and to make an example of him, the wealthier the wrongdoer, the larger the award of punitive damages. [Citation.]" (*Downey Savings & Loan Assn. v. Ohio Casualty Ins.* *78 *Co.* (1987) 189 Cal.App.3d 1072, 1099–1100, 234 Cal.Rptr. 835, citing *Bertero v. National General Corp.* (1974) 13 Cal.3d 43, 56, 118 Cal.Rptr 184, 529 P.2d 608.) "[O]bviously, the function of deterrence ... will not be served if the wealth of the defendant allows him to absorb the award with little or no discomfort. [Citations.]" (*Neal, supra,* 21 Cal.3d at p. 928, 148 Cal.Rptr. 389, 582 P.2d 980.) Moreover, "[b]oth California and the federal authorities agree that profits earned from tortious activity that supports an award of punitive damages are appropriately considered in the amount awarded. [Citations.]" (*Boeken, supra,* 127 Cal.App.4th at p. 1697, 26 Cal.Rptr.3d 638.)[8]

[9] [10] [11] In assessing whether a punitive damages award is excessive relative to the defendant's wealth, "the key question ... is ... whether the amount of damages **857 'exceeds the level necessary to properly punish and deter.' [Citations.]" (*Adams, supra,* 54 Cal.3d at p. 110, 284 Cal.Rptr. 318, 813 P.2d 1348.) Calculation of punitive damages "involves ... 'a fluid process of adding or subtracting depending on the nature of the acts and the effect on the parties and the worth of the defendants.' " (*Devlin v. Kearny Mesa AMC/Jeep/Renault, Inc.* (1984) 155 Cal.App.3d 381, 390, 202 Cal.Rptr. 204 (*Devlin*).) These factors are not evaluated under a rigid formula. "Whether punitive damages should be awarded and the amount of such an award are issues for the jury and for the trial court on a new trial motion. All presumptions favor the correctness of the verdict and judgment. [Citation.]" (*Id.* at pp. 387–388, 202 Cal.Rptr. 204.) " 'Juries ... have a wide discretion in determining what is proper. [Citation.]' [Citation.]" (*Id.* at p. 390, 202 Cal.Rptr. 204.)

[12] [13] Nonetheless, "[b]ecause the important question is whether the punitive damages will have the deterrent effect without being excessive, an award that is reasonable in light of the ... reprehensibility of the defendant's conduct and injury to the victims, may nevertheless 'be so disproportionate to the defendant's ability to pay that the award is excessive' for that reason alone. [Citation.] '[T]he purpose of punitive damages is not served by financially destroying a defendant. The purpose is to deter, not to destroy.' [Citation.]" (*Rufo, supra,* 86 Cal.App.4th at p. 620, 103 Cal.Rptr.2d 492.)

3. Net Worth as a Measure of Wealth

[14] In the present case, ArvinMeritor's principal ground for contending the award is excessive under California law is its contention that punitive *79 damage awards are limited to 10 percent of the defendant's net worth, which in ArvinMeritor's case was negative. Contrary to ArvinMeritor's contention, however, net worth is not the only measure of a defendant's wealth for punitive damages purposes that is recognized by the California courts. " Indeed, it is likely that blind adherence to any one standard [of determining wealth] could sometimes result in awards which neither deter nor punish or which deter or punish too much." (*Lara v. Cadag* (1993) 13 Cal.App 4th 1061, 1064–1065 & fn. 3, 16 Cal.Rptr.2d 811 (*Lara*).)

"Although net worth is the most common measure of the defendant's financial condition, it is not the only measure for determining whether punitive damages are excessive in relation to that condition. [Citations.]" (*Rufo, supra,* 86 Cal.App.4th at p. 624, 103 Cal.Rptr.2d 492.) For example, in *Rufo,* the court upheld a punitive damages award that "technically exceed [ed]" the wealthy individual defendant's net worth, because the evidence showed that the defendant would not be financially "destroyed by the award." (*Id.* at p. 625, 103 Cal Rptr 2d 492.)

Moreover, as one California court has pointed out, " '[n]et worth' is subject to easy manipulation and . . should not be the only permissible standard." (*Lara, supra,* 13 Cal.App.4th at p. 1065, fn. 3, 16 Cal.Rptr.2d 811.) Thus, for example, in *Michelson v. Hamada* (1994) 29 Cal.App.4th 1566, 36

Cal.Rptr.2d 343, the evidence of the defendant's financial condition included net worth statements for two successive years. The first statement, which was prepared for submission to a bank as part of a loan application, showed a far higher net worth figure than the second, which was prepared for use in the litigation. The trial judge called the lower figure " 'patently crooked,' " and the Court of Appeal, although holding the punitive award excessive, agreed that the higher figure was the appropriate one to use for **858 the purpose of determining that question. (*Id.* at pp. 1595–1596, 36 Cal.Rptr.2d 343.)

In *Zaxis Wireless Communications, Inc. v. Motor Sound Corp.* (2001) 89 Cal.App.4th 577, 107 Cal.Rptr.2d 308 (*Zaxis*), the court affirmed an award of punitive damages in the amount of $300,000, even though the defendant had a negative net worth of $6.3 million, because the evidence showed that the defendant had the ability to pay the award. (*Id.* at pp. 580–581, 107 Cal.Rptr.2d 308.) The court noted that "the [California] Supreme Court has expressly declined to adopt net worth as the standard for determining a defendant's ability to pay in any given situation. [Citation.]" (*Id.* at p. 582, 107 Cal.Rptr.2d 308, citing *Adams, supra,* 54 Cal.3d at p. 116, fn. 7, 284 Cal.Rptr. 318, 813 P.2d 1348.) It agreed that "[n]et worth is too easily subject to manipulation to be the sole standard for measuring a defendant's ability to pay...." (*Id.* at pp. 582–583, 107 Cal.Rptr.2d 308, citing *Lara, supra,* 13 Cal.App.4th at pp. 1064–1065 & fn. 3, 16 Cal.Rptr.2d 811.) Noting the "ease with which net worth is subject to adjustment for amortization and depreciation," the court pointed out that in the case before it, "the net worth calculation included accumulated depreciation ... and a *80 note to the sole shareholder," which "represent[ed] a loss for accounting purposes," but "did not impact" the defendant's ability to pay in the same way that salary and wage expenses would. (*Zaxis, supra,* 89 Cal.App.4th at p. 583, 107 Cal.Rptr.2d 308.)

The *Zaxis* court also noted that the defendant's financial statement showed it had "cash on hand and a checking account balance of over $19 million," as well as a credit line of $50 million, of which $5.3 million remained available to the defendant. The extension of the line of credit "indicate[d] the lender made a determination [the defendant] had the ability to pay amounts well in excess of the ... punitive damage award." (*Zaxis, supra,* 89 Cal.App.4th at p. 583, 107 Cal.Rptr.2d 308.) Accordingly, the award was not "excessive as a matter of law or so disproportionate to the ability to pay as to indicate passion or prejudice on the part of the jury." (*Ibid.*)

Similarly, in *Devlin, supra,* 155 Cal.App.3d 381, 202 Cal.Rptr. 204, the court affirmed a punitive damages verdict against a corporation that represented 17.5 percent of its annualized net worth, or almost four months net profit. (See *id.* at pp. 391–392, 202 Cal.Rptr. 204.) In rejecting the defendant's argument that the award was excessive, the *Devlin* court relied in part on an unexplained accounting adjustment in the company's financial records that operated to reduce its net worth. (See *id.* at pp. 385, 391, 202 Cal.Rptr. 204.) The court also took note of a resolution authorizing the corporation to borrow money, opining that a resolution to borrow "serves as an indicator of the continuing health and viability of a business." (*Id.* at p. 391, 202 Cal.Rptr. 204.) The *Devlin* court "compiled a list of cases in an attempt to discover a formula for determining whether a given percentage of net worth is excessive ultimately concluded there is no formula, and that each case must be decided on its own facts, considering ... various indicators of wealth...." (*Rufo, supra,* 86 Cal.App.4th at p. 625, 103 Cal.Rptr.2d 492, citing *Devlin, supra,* 155 Cal.App.3d at pp. 388–389, 391–392, 202 Cal.Rptr. 204.) Thus, the court held that in arriving at the amount of punitive damages, the trial court properly took into account the defendant's "net worth plus a variety of other figures relating to [the defendant's] wealth," and noted that "[o]ther courts have considered various asset and income figures relevant to the issue of punitive damages." (*Devlin, supra,* at p. 391, 202 Cal.Rptr. 204.)

**859 ArvinMeritor's challenge to the punitive damages award relies primarily on a plethora of older California cases to the effect that punitive damages amounting to more than 10 percent of the defendant's net worth are excessive. The most recent case ArvinMeritor cites for this proposition is *Sierra Club Foundation v. Graham* (1999) 72 Cal.App.4th 1135, 1162–1163, 85 Cal.Rptr.2d 726. In that case, the court affirmed a punitive damages award amounting to between two and three percent of defendant's net worth. As part of *81 the rationale for affirming the award, the court noted that it was " far less than the 10 percent cap generally recognized by our courts. [Citation.]"

ArvinMeritor also relies for this point on *Weeks, supra,* 63 Cal.App.4th at pages 1166–1167, 74 Cal.Rptr.2d 510. In that case, the court affirmed an award that the trial judge had reduced to five percent of the defendant's net worth. In so doing, the court noted that "[i]t has been recognized that punitive damages awards generally are not permitted to exceed 10 percent of the defendant's net worth. [Citation.]" (Fn. omitted.)

In *Michelson v. Hamada, supra,* 29 Cal.App.4th at pages 1595–1596, 36 Cal.Rptr.2d 343, the court vacated an award of punitive damages equal to 28 percent of the defendant's net worth, and remanded for remittitur or retrial. In that context, the court noted that punitive damages "awards generally are not allowed to exceed 10 percent of the net worth of the defendant. [Citation.]" Similarly, in *Storage Services v. Oosterbaan* (1989) 214 Cal.App.3d 498, 514–516, 262 Cal.Rptr. 689, in reversing an award amounting to 33 percent of the defendant's net worth, the court indicated that "punitive damage awards are generally not allowed to exceed 10 percent of the defendant's net worth."

In *Seeley v. Seymour* (1987) 190 Cal.App.3d 844, 237 Cal.Rptr. 282, which arose from the defendant's "unethical business tactics," the court vacated as excessive an award of $2.66 million in punitive damages, which was equal to 13.3 times the compensatory damages, and remanded for a new trial on both compensatory and punitive damages. While expressly declining to compare the punitive damages to the defendant's net worth, the court remarked in dictum that "awards totalling more than 10 percent of a defendant's net worth have been disfavored by our courts...." (*Id.* at pp. 868–869, 237 Cal.Rptr. 282.)

In *Burnett v. National Enquirer, Inc.* (1983) 144 Cal.App.3d 991, 193 Cal.Rptr. 206, a defamation case, the court held that an award of $1.3 million in punitive damages, which the trial court had reduced to $750,000, was still excessive, inasmuch as it amounted to 35 percent of the defendant's $2.6 million net worth. The court ordered a new trial unless the plaintiff accepted a reduction to $150,000. (*Id.* at pp. 997, 1012, 1018–1019, 193 Cal.Rptr. 206.) This figure was three times the compensatory damages, and fell between five and six percent of the defendant's net worth, but the court did not rely on either of these facts. Indeed, the court did not articulate any rationale for the choice of the $150,000 figure, and made no reference to any set limitation on punitive damages as a percentage of net worth.

***82** In *Goshgarian v. George* (1984) 161 Cal.App.3d 1214, 208 Cal.Rptr. 321, the court noted that "punitive damage awards exceeding 10 percent of a defendant's net worth have generally been disfavored by the appellate courts" (*id.* at p. 1228, 208 Cal.Rptr. 321, italics omitted), and on that basis, concluded that a punitive damage award amounting to approximately 10.7 percent of the defendant's net worth was *not* unduly disproportionate to his wealth. ****860** (*Id.* at pp. 1227–1229, 208 Cal.Rptr. 321.) The court did hold the amount of punitives awarded was too large, but only because the defendant's conduct in draining his swimming pool across his neighbors' property was not sufficiently reprehensible to support such a large award. (*Id.* at pp. 1229–1230, 208 Cal.Rptr. 321.)

In *Little v. Stuyvesant Life Ins. Co.* (1977) 67 Cal.App.3d 451, 469–470, 136 Cal.Rptr. 653, the court held that a punitive damages award of $2.5 million, which was more than 15 percent of the defendant's net worth, and 14 times the compensatory damages, was excessive as a matter of law. It ordered a new trial unless the plaintiff agreed to reduce the award to the amount of punitive damages originally demanded in her complaint, which was $250,000.

In *Merlo v. Standard Life & Acc. Ins. Co.* (1976) 59 Cal.App.3d 5, 18, 130 Cal.Rptr. 416, the court reversed the award of punitive damages on a number of grounds, including that the amount of the award was almost one-third of the defendant's net worth, as shown by the uncontradicted evidence. It remanded for a retrial on liability for punitive damages, as well as the amount. In neither of these cases did the court make any mention of any fixed limitation on punitive damages as a percentage of the defendant's net worth.

ArvinMeritor argues these cases establish, as a matter of law, that punitive damages may not exceed 10 percent of the defendant's net worth, which represents a "cap" on allowable punitive damage awards. However, as shown by our summaries in the preceding paragraphs, none of the cited cases actually *held* that punitive damages exceeding 10 percent of the defendant's net worth are per se impermissible. Moreover, these cases cannot be read as requiring punitive damages to be measured only against the defendant's net worth despite undisputed expert testimony that the defendant's net worth is not an accurate measure of its wealth.

Here, the jury was entitled to credit Johnson's uncontroverted testimony that ArvinMeritor was far wealthier than its stated net worth would indicate, and that net worth alone is an untrustworthy standard, because it is so easily manipulated. Johnson's caveat about the perils of relying solely on a net worth valuation standard echoed the same concerns expressed by the courts in the relatively more recent *Zaxis, Rufo, Lara,* and *Devlin* cases. (*Zaxis, supra,* 89 Cal.App 4th at p. 582, 107 Cal.Rptr.2d 308; *Rufo, supra,* 86 Cal.App.4th at p. 621, 103 Cal.Rptr.2d 492; ***83** *Lara, supra,* 13 Cal.App.4th at pp. 1064–1065 & fn. 3, 16 Cal.Rptr.2d 811; *Devlin, supra,* 155 Cal.App 3d at pp. 391–392, 202 Cal.Rptr. 204.) Thus, we reject the argument that 10 percent of net worth constitutes a ceiling above which juries may not go in setting the amount of punitive damages.

[15] The issue before us on review is not whether the award exceeds some specified percentage of the company's net worth. Rather, it is whether the trial court abused its discretion in determining that the amount of punitive damages awarded by the jury was not the result of passion or prejudice. Our task simply is to determine whether, "[c]onsidering all the factors, the punitive damages award, 'in light of the defendant's wealth and the gravity of the particular act,' ... exceed[s] 'the level necessary to properly punish and deter.' [Citation.]" (*Rufo, supra,* 86 Cal.App.4th at p. 625, 103 Cal.Rptr.2d 492.)

[16] The size of the jury's punitive damage verdict, and the trial judge's denial of ArvinMeritor's motions for judgment notwithstanding the verdict and for new trial, imply that both the jury and the trial judge accepted Johnson's assessment as to **861 ArvinMeritor's ability to pay the $4.5 million punitive damages award. This implied factual finding is fully supported by the evidence.

As already noted, in 2010, ArvinMeritor earned a cash flow profit of $211 million, and reported a net profit of $12 million. The 2010 compensation of its CEO was $7.6 million. Moreover, while the company had a negative net worth of $1.023 billion, it was able to borrow $245 million in 2010, and had $343 million in cash or the equivalent at its disposal as of the end of the year.

The jury's punitive damages award of $4.5 million amounted to 37.5 percent of ArvinMeritor's net profit for 2010. While this is hardly a slap on the wrist, $4.5 million is only a small percentage—about 1.3 percent—of ArvinMeritor's immediately available funds as of the end of 2010. It is significantly less than what ArvinMeritor paid its CEO that year, and less than one-fourth of the amount ArvinMeritor had promised to pay its CEO if he were fired without cause ($24.5 million) or replaced if the company were sold ($26.9 million). Moreover, Johnson's testimony that the company was financially sound was uncontroverted, and ArvinMeritor chose not to introduce evidence tending to show that it would be financially destroyed by an award of $4.5 million in punitive damages.[9]

*84 Under these circumstances, we cannot say that the jury's punitive damages award, though large, is so disproportionate to ArvinMeritor's ability to pay as to lead ineluctably to the conclusion that the award resulted from passion or prejudice. Rather, the jury was justified by the evidence in concluding that an award of that magnitude was necessary and appropriate in order to punish ArvinMeritor for its contribution to causing the disease that took Bankhead's life, and to deter ArvinMeritor and other manufacturers from failing to take every available precaution to mitigate workers' exposure to life-threatening toxic substances.

B. Due Process Constraints on Punitive Damages

[17] As an additional ground for striking or reducing the punitive damages award, ArvinMeritor argues that the size of the award exceeds the federal constitutional limits applicable to state court punitive damages awards. These limits were articulated in a line of United States Supreme Court cases culminating in *State Farm Mut. Automobile Ins. Co. v. Campbell* (2003) 538 U.S. 408, 416–418, 123 S.Ct. 1513, 155 L.Ed.2d 585 (*State Farm*). (See also *Cooper Industries, Inc. v. Leatherman* **862 *Tool Group, Inc.* (2001) 532 U.S. 424, 433, 121 S.Ct. 1678, 149 L.Ed.2d 674; *BMW of North America, Inc. v. Gore* (1996) 517 U.S. 559, 568, 116 S.Ct. 1589, 134 L.Ed.2d 809 (*BMW*).)

1. Nature of Constraints and Standard of Review

[18] "The due process clause of the Fourteenth Amendment to the United States Constitution places constraints on state court awards of punitive damages. [Citations.]" (*Roby v. McKesson Corp.* (2009) 47 Cal.4th 686, 712, 101 Cal.Rptr.3d 773, 219 P.3d 749 (*Roby*); see *State Farm, supra,* 538 U.S. at pp. 416–418, 123 S.Ct. 1513; *BMW, supra,* 517 U.S. at p. 568, 116 S.Ct. 1589.) "The imposition of 'grossly excessive or arbitrary' awards is constitutionally prohibited, for due process entitles a tortfeasor to ' "fair notice not only of the conduct that will subject him to punishment, but also of the severity of the penalty that a State may impose." ' [Citation.]" (*Simon v. San Paolo U.S. Holding Co., Inc.* (2005) 35 Cal.4th 1159, 1171, 29 Cal.Rptr.3d 379, 113 P.3d 63 (*Simon*).)

[19] "In *State Farm,* the high court articulated 'three guideposts' for courts reviewing punitive damages: '(1) the degree of reprehensibility of the defendant's misconduct; (2) the disparity between the actual or potential harm *85 suffered by the plaintiff and the punitive damages award; and (3) the difference between the punitive damages awarded by the jury and the civil penalties authorized or imposed in comparable cases.' [Citations.]" (*Roby, supra,* 47 Cal.4th at p. 712, 101 Cal.Rptr.3d 773, 219 P.3d 749, quoting *State Farm, supra,* 538 U.S. at p. 418, 123 S.Ct. 1513.)[10] Our own Supreme Court has characterized the constitutional test

as "a three-factor weighing analysis looking to the nature and effects of the defendant's tortious conduct and the state's treatment of comparable conduct in other contexts." (*Simon, supra,* 35 Cal.4th at pp. 1171–1172, 29 Cal.Rptr.3d 379, 113 P.3d 63.)

[20] In adjudicating a due process challenge to a punitive damages award, we review the express or implied factual findings of the trier of fact under the deferential substantial evidence test. However, we make our own "independent assessment of the reprehensibility of the defendant's conduct, the relationship between the award and the harm done to the plaintiff, and the relationship between the award and civil penalties authorized for comparable conduct. [Citations.]" (*Simon, supra,* 35 Cal.4th at p. 1172, 29 Cal.Rptr.3d 379, 113 P.3d 63.)

2. Reprehensibility of ArvinMeritor's Conduct

"Of the three-guideposts that the high court outlined in *State Farm, supra,* 538 U.S. at page 418 [123 S Ct. 1513], the most important is the degree of reprehensibility of the defendant's conduct. On this question, the high court instructed courts to consider whether '[1] the harm caused was physical as opposed to economic; [2] the tortious conduct evinced an indifference to **863 or a reckless disregard of the health or safety of others; [3] the target of the conduct had financial vulnerability; [4] the conduct involved repeated actions or was an isolated incident; and [5] the harm was the result of intentional malice, trickery, or deceit, or mere accident.' [Citation.]" (*Roby, supra,* 47 Cal.4th at p. 713, 101 Cal.Rptr.3d 773, 219 P.3d 749.)

In the present case, all of these factors weigh in favor of a high degree of reprehensibility. As the court put it in *Boeken, supra,* 127 Cal.App.4th at page 1690, 26 Cal.Rptr.3d 638, "intentionally marketing a defective product knowing that it might cause injury and death is 'highly reprehensible.' [Citation.]" In the present case, Bankhead contracted a painful cancer, and ultimately died, due to ArvinMeritor's (and the other defendants') failure to ensure that people like *86 Bankhead who used or worked with asbestos-containing products were not exposed to lethal asbestos dust. ArvinMeritor's conduct continued over many years, and evinced an indifference to or reckless disregard of the health and safety of Bankhead and those similarly situated. (See *Philip Morris USA v. Williams* (2007) 549 U.S. 346, 355, 127 S.Ct. 1057, 166 L.Ed.2d 940 ["Evidence of actual harm to nonparties can help to show that the conduct that harmed the plaintiff also posed a substantial risk of harm to the general public, and so was particularly reprehensible"]; see also *Bullock, supra,* 198 Cal.App.4th at pp. 559–561, 131 Cal.Rptr.3d 382 [in determining reprehensibility, court relied on fact that tobacco company knew many smokers would suffer death or serious injury, but sought for many years to convince public that health concerns regarding smoking were unfounded].)

ArvinMeritor argues that Bankhead was not financially vulnerable. We disagree As industrial workers, Bankhead and others who were exposed to asbestos fibers on the job were financially vulnerable in that they could not avoid the exposure without leaving their employment. (See generally *Roby, supra,* 47 Cal.4th at p. 713, 101 Cal.Rptr.3d 773, 219 P.3d 749 [characterizing " 'relatively low-level employee' " as financially vulnerable to employer's discrimination and harassment]; *Gober v. Ralphs Grocery Co.* (2006) 137 Cal.App.4th 204, 220, 40 Cal.Rptr.3d 92 [group of grocery store employees who relied on their jobs for their livelihood were financially vulnerable]; *Boeken, supra,* 127 Cal.App.4th at p. 1691, 26 Cal.Rptr.3d 638 [characterizing consumers of tobacco products as financially vulnerable]).[11]

[21] Finally, we come to the issue of intentional, repeated conduct versus a one-time accident. The jury found against ArvinMeritor on those issues, concluding that ArvinMeritor was 15 percent responsible for the damages resulting from Bankhead's asbestos exposure, and that it acted with malice, fraud, or oppression. Our obligation to conduct a due process analysis regarding punitive damages does not create an opportunity for ArvinMeritor to make an end run around those factual findings. (Cf. *Gober, supra,* 137 Cal.App.4th at p. 214, 40 Cal.Rptr.3d 92 ["in deciding the constitutional maximum, a court does not decide whether the verdict is unreasonable based on the facts"].) While there is no evidence that ArvinMeritor intended to injure Bankhead or anyone **864 else in particular, its prolonged failure to take adequate measures to protect people who worked with its products against a known hazard to their health and safety justifies the jury's conclusion that its conduct towards workers exposed to the hazards in its products was malicious, fraudulent, or oppressive.

[22] *87 ArvinMeritor attempts to minimize its degree of reprehensibility by emphasizing that the jury determined it was only 15 percent at fault for Bankhead's exposure to asbestos. Neither *State Farm, supra,* 538 U.S. 408, 123 S.Ct. 1513, nor any of the cases on which ArvinMeritor relies holds that a defendant's degree of reprehensibility for punitive damages purposes is affected by whether the conduct

of others was concurrently responsible for the plaintiff's injuries. Rather, for the purpose of the punitive damages analysis, the proper role of the jury's finding assigning ArvinMeritor a low percentage of liability is to reduce the amount of compensatory damages with which the amount of punitive damages is compared, when considering the ratio between the two. (See next section of discussion, *post*.) Thus, ArvinMeritor's low percentage of liability for compensatory damages may reduce its punitive damages exposure, but not in the way ArvinMeritor argues.

ArvinMeritor also argues that its degree of reprehensibility is reduced because starting in the 1980's, it warned persons who were exposed to its products that they should avoid breathing asbestos dust, and, as early as the mid–1970's, it took measures to reduce the amount of dust associated with its products. This may be so, but it does not mean, as ArvinMeritor asserts, that the punitive damages in this case cannot constitutionally exceed the amount of compensatory damages.

Neither of the cases cited by ArvinMeritor for this proposition so holds. In *Hoch v. Allied–Signal, Inc.* (1994) 24 Cal.App.4th 48, 29 Cal.Rptr.2d 615, the trial court's order granting the defendant a nonsuit on the plaintiff's punitive damages claim was affirmed, because no reasonable jury could have found malicious conduct by clear and convincing evidence. (*Id.* at pp. 58–62, 29 Cal.Rptr.2d 615.) Similarly, in *Shade Foods, Inc. v. Innovative Products Sales & Marketing, Inc.* (2000) 78 Cal.App.4th 847, 93 Cal.Rptr.2d 364, a first-party business insurance bad faith case, the court held that due to the complexity of the insurance coverage issues involved, the award of punitive damages was not supported by clear and convincing evidence of contemptible or despicable conduct. (*Id.* at pp. 890–893, 93 Cal.Rptr.2d 364.) Here, ArvinMeritor does not dispute that the evidence was sufficient to support the jury's verdict finding it liable for punitive damages. Accordingly, *Hoch v. Allied–Signal, Inc.* and *Shade Foods, Inc. v. Innovative Products Sales & Marketing, Inc.* are not germane to the issues presented.

We find *Weeks, supra,* 63 Cal.App.4th 1128, 74 Cal.Rptr.2d 510, far more pertinent on this point. In that case, the defendant argued that the punitive damages award against it should have been reduced because of measures it took to avoid a recurrence of the sexual harassment on which the award was based. The court was "not persuaded that the award should have been reduced because of the evidence that [the defendant] has 'learned its lesson,' and thus will be *88 deterred from like conduct in the future. Limiting an award because of a defendant's contrition certainly encourages contrition. It also, however, reduces the risk that serious consequences will result from failing to prevent the wrongful conduct in the first place. Limiting an award because of a defendant's contrition therefore undermines the purpose **865 of punitive damages." (*Id.* at p. 1167, 74 Cal.Rptr.2d 510.)

Similarly here, limiting the award in this case would undermine the purpose of punitive damages by giving undue credit to ArvinMeritor's belated efforts to warn users of its products about the hazards of asbestos, which the jury implicitly found were ineffective and inadequate. Allowing the award to stand, on the other hand, will serve the purposes of punishment and deterrence by encouraging ArvinMeritor and other manufacturers, in the future, to take every available step to eliminate life-threatening hazards from their products and manufacturing processes altogether, rather than relying on workers and consumers to protect themselves from dangers they may not be in a position to fully understand or entirely avoid.

3. Range of Constitutionally Acceptable Ratios

[23] The second part of the federal due process analysis focuses not on the absolute *amount* of punitive damages, but rather on the appropriate *ratio* between the compensatory and punitive damages, given the specific facts of the case. That is, "punitive damages must bear a ' "reasonable relationship" ' to compensatory damages or to the actual or potential harm to the plaintiff. [Citations.]" (*Bullock, supra,* 198 Cal.App.4th at p. 563, 131 Cal.Rptr.3d 382, quoting *BMW, supra,* 517 U.S. at pp. 575, 580, 116 S.Ct. 1589; see also *State Farm, supra,* 538 U.S. at pp. 424–426, 123 S.Ct. 1513.)

California published opinions on this issue have adopted a broad range of permissible ratios—from as low as one to one to as high as 16 to one—depending on the specific facts of each case. The low end of the range is exemplified by *Roby, supra,* 47 Cal 4th 686, 101 Cal.Rptr.3d 773, 219 P.3d 749. *Roby* was an employment discrimination and harassment case involving primarily emotional harm to the plaintiff, with a minor physical component, and no evidence of repeated discriminatory acts by the defendant. Noting that the jury's award of substantial emotional distress damages already included a punitive element, a majority of our Supreme Court held that the maximum constitutionally permissible ratio of punitive to compensatory damages was one to one. (*Id.* at pp. 718–719, 101 Cal.Rptr.3d 773, 219 P.3d 749.) The two justices in the minority would have applied a two-to-one ratio.

(*Id.* at pp. 722–724, 101 Cal.Rptr.3d 773, 219 P.3d 749 (conc. & dis. opinion of Werdegar, J.).)

A more recent case falling toward the low end of the range is *89 *Amerigraphics, Inc. v. Mercury Casualty Co.* (2010) 182 Cal.App.4th 1538, 107 Cal.Rptr.3d 307 (*Amerigraphics*). *Amerigraphics* was a first-party insurance bad faith case in which the plaintiff was a small printing business whose premises and equipment were damaged by a water leak. The only factor weighing in favor of a high degree of reprehensibility was the plaintiff's financial vulnerability, particularly in that the insurance company's "egregious conduct put [Amerigraphics] out of business." (*Ibid*; see *id.* at pp. 1562–1563, 107 Cal.Rptr.3d 307.) On the other hand, there was no punitive element to the compensatory damages, and the defendant was a wealthy insurance company. Relying in part on the defendant's concession that $500,000 in punitive damages would be appropriate, the court held that sum to be constitutionally permissible. This resulted in a 3.8–to–one ratio of punitive to compensatory damages. (See *id.* at p. 1566, 107 Cal.Rptr.3d 307.)

An example of a ratio a few steps up the scale is the six-to-one ratio permitted in **866 *Gober, supra,* 137 Cal.App.4th 204, 40 Cal.Rptr.3d 92. *Gober* was a sexual harassment case based on the treatment of several employees by a single manager, in which the trial court remitted each plaintiff's punitive damages to 15 times her compensatories, and both parties appealed. On appeal, the court rejected the employer's contention that the punitive damages should not exceed three times the compensatory damages. Instead, it held that a six-to-one ratio between punitive and compensatory damages was the appropriate constitutional maximum. The court applied this ratio even though the employer's conduct was only moderately reprehensible, in that the manager did not cause or threaten any physical injury to the plaintiffs, and the employer transferred the manager promptly after his misconduct was reported. (See *id.* at pp. 219–223, 40 Cal.Rptr.3d 92.)

An even higher ratio was approved in *Simon, supra,* 35 Cal.4th 1159, 29 Cal.Rptr.3d 379, 113 P.3d 63, which arose out of an aborted commercial real estate transaction. In *Simon,* the defendant's single act of fraud caused the plaintiff only $5,000 in compensatory damages; did not involve any physical harm or threat to health and safety; and did not target a particularly vulnerable plaintiff. Nonetheless, because of the defendant's substantial wealth, and the lack of any punitive element in the relatively small compensatory damages award, the Supreme Court held that a 10–to–one ratio could properly be applied. (*Id.* at pp. 1188–1189, 29 Cal.Rptr.3d 379, 113 P.3d 63.) In so doing, the court interpreted *State Farm, supra,* 538 U.S. at page 425, 123 S.Ct. 1513, as "establish[ing] a type of presumption: ratios between the punitive damages award and the plaintiff's actual or potential compensatory damages significantly greater than 9 or 10 to 1 are suspect and, absent special justification ..., cannot survive appellate scrutiny under the due process clause." (*Simon, supra,* 35 Cal.4th at p. 1182, 29 Cal.Rptr.3d 379, 113 P.3d 63, fn. omitted.) The court emphasized, however, that the presumption of suspectness applies only to ratios that exceed the limit " 'to a significant degree,' " and even then, the *90 presumption may be rebutted by "extreme reprehensibility or unusually small, hard-to-detect or hard-to-measure compensatory damages." (*Id.* at p. 1182 & fn. 7, 29 Cal.Rptr.3d 379, 113 P.3d 63.)

Finally, in a recent product liability case involving a manufacturer's intentional deceit of the public as to the safety of its product—to wit, the cigarettes that ultimately killed the plaintiff—the court in *Bullock, supra,* 198 Cal.App.4th 543, 131 Cal.Rptr.3d 382, approved a punitive damages award of approximately 16 times compensatory damages. Relying in part on *Simon, supra,* 35 Cal.4th 1159, 29 Cal.Rptr.3d 379, 113 P.3d 63, the court held that the "extreme reprehensibility" of the defendant tobacco company's conduct, including its "vast 'scale and profitability,' " when coupled with the relatively small size and nonpunitive nature of the compensatory damages award, rebutted the presumptively suspect nature of the 16–to–one ratio, and justified affirming the jury's punitive damage award. (*Bullock, supra,* 198 Cal.App.4th at pp. 560–563, 565–566, 569 & fn. 16, 573, 131 Cal.Rptr.3d 382.)

4. Analysis

[24] As already noted, ArvinMeritor's conduct was highly reprehensible. The jury's award of $2.5 million in noneconomic damages for Bankhead's pain and suffering and his wife's loss of consortium is high enough that it appears to include a punitive component. The inclusion of a punitive element in emotional distress damages reduces the permissible ratio of punitive to compensatory damages. (See, **867 e.g., *Roby, supra,* 47 Cal.4th at pp. 718–720, 101 Cal.Rptr.3d 773, 219 P.3d 749 [award of $1.3 million as compensatory damages for emotional distress included punitive component; one-to-one ratio of punitive to compensatory damages was constitutional maximum]; *Walker v. Farmers Ins. Exchange* (2007) 153 Cal.App.4th 965, 974, 63 Cal.Rptr.3d 507 [in insurance bad faith case, award of $750,000 each to two plaintiffs for emotional

distress included punitive element; trial court correctly reduced punitive damages to $1.5 million]; *Gober, supra,* 137 Cal.App.4th at pp. 219, 222–223, 40 Cal.Rptr.3d 92 [where bulk of harm to plaintiffs from manager's sexual harassment was emotional injury, compensatory damage awards ranging from $50,000 to $75,000 contained a punitive element; maximum ratio of punitive to compensatory damages was six to one].)

Here, the jury's award resulted in an amount of punitive damages equal to approximately 2.4 times the $1.845 million share of compensatory damages for which ArvinMeritor was held liable. This single-digit ratio is well within the range for comparable cases, and is not extraordinarily high. Accordingly, we are not persuaded that the award exceeded the constitutionally permissible limits.

*91 DISPOSITION

The judgment is affirmed. Respondents are awarded their costs on appeal.

We concur: RIVERA, J. and SEPULVEDA, J. *

Parallel Citations

205 Cal.App.4th 68, 12 Cal. Daily Op. Serv. 4297, 2012 Daily Journal D.A.R. 5011

Footnotes

1 Gordon Bankhead died during the pendency of this appeal. On November 28, 2011, his widow, Emily Bankhead, was substituted in on behalf of his estate. We refer to Gordon Bankhead individually as Bankhead, and use the term respondents to refer collectively to Bankhead, his estate, and his widow.

2 ArvinMeritor does not dispute its liability for the acts and omissions of Rockwell, its predecessor in interest. Accordingly, we draw no distinction between the two companies, and refer to them collectively as ArvinMeritor.

3 Respondents originally sued numerous companies alleged to have contributed to Bankhead's asbestos-related mesothelioma. All of the defendants except ArvinMeritor and Abex had settled by the time this case was briefed on appeal. ArvinMeritor and Abex each filed separate appeals from the original judgment. ArvinMeritor's appeal was assigned case number A131587, and Abex's appeal was assigned case number A131378. After the trial court entered an amended judgment, ArvinMeritor and Abex each appealed from the amended judgment, and the resulting appeals were both assigned case number A132985 (the joint appeal). All three appeals were consolidated, and only one record was filed. However, we eventually vacated the consolidation, bifurcated the joint appeal, and consolidated each appellant's portion of the joint appeal with that appellant's respective separate appeal. This opinion addresses only the contentions raised by ArvinMeritor in its separate appeal and its portion of the joint appeal. A separate opinion will address Abex's separate appeal and Abex's portion of the joint appeal, which has been redesignated as case number A135224 (Order, Apr. 23, 2012, Ruvolo, P.J.)

4 As already noted, although Bankhead did live longer than 12 months after his diagnosis, he died during the pendency of this appeal.

5 In fact, ArvinMeritor's liability for economic damages was reduced to zero after trial, because these damages were offset in their entirety by the proceeds from Bankhead's settlements with other defendants. ArvinMeritor does not contend that this reduction affects the issues presented by this appeal.

6 Johnson explained that cash flow profit is derived by subtracting from revenue those expense items that actually have to be paid, such as cost of goods sold and salaries, but not subtracting any deductions that do not actually require an expenditure of cash, such as depreciation.

7 ArvinMeritor's argument under California law focuses on its financial condition, and we do likewise. The nature of ArvinMeritor's wrongdoing and the actual harm to Bankhead are discussed *post* in connection with our federal due process review of the punitive damages award. Suffice it to say that for the reasons expressed *post,* neither of these factors weighs in favor of a reduction of the award under California law.

8 The wealth of a defendant cannot justify a punitive damages award that is otherwise unconstitutional under the federal due process analysis discussed *post.* Nonetheless, the United States Supreme Court recognizes that deterrence is one of the primary purposes of punitive damages, and nothing in the applicable due process cases precludes California courts from relying in part on a defendant's wealth in assessing the appropriate amount of punitive damages (*Boeken, supra,* 127 Cal.App.4th at p. 1697, 26 Cal.Rptr.3d 638.)

9 At oral argument, ArvinMeritor's counsel warned that affirming the punitive damages award in this case could lead to plant closures, layoffs, and other dire consequences. Nothing in the record supports these speculative contentions. ArvinMeritor also argues that it should not be faulted for its failure to controvert Johnson's testimony about its financial condition, citing *Adams, supra,* 54 Cal.3d 105, 284 Cal.Rptr. 318, 813 P.2d 1348. In that case, the Supreme Court opined that "[i]t is inherently prejudicial to require a defendant to introduce evidence of personal finances" (*id.* at p. 120, 284 Cal.Rptr. 318, 813 P.2d 1348), citing a treatise advising defense counsel

in insurance bad faith cases to " 'be careful about presenting "mitigating" evidence as to [the defendant's] financial condition,' " lest the jury " 'regard it as a tacit admission that some award of punitive damages is appropriate.' " (*Id* at p. 121, 284 Cal.Rptr. 318, 813 P.2d 1348.) *Adams* did not hold, however, that a defendant facing a punitive damages claim cannot or should not present evidence to controvert the plaintiff's factual showing regarding the defendant's financial condition. It held only that plaintiffs who seek punitive damages have the burden of presenting evidence, as well as the burden of proof, regarding the defendant's finances. (See *id.* at pp. 119–123, 284 Cal.Rptr. 318, 813 P.2d 1348.)

10 As noted in *Simon, supra,* 35 Cal.4th at pages 1183–1184, 29 Cal.Rptr.3d 379, 113 P.3d 63, the factor of civil penalties for comparable misconduct is not particularly useful in a case involving only common law tort duties. In two tobacco-related personal injury cases, California courts have found the civil penalty comparability factor essentially irrelevant (See, e.g., *Bullock v. Philip Morris USA, Inc.* (2011) 198 Cal.App.4th 543, 570, 131 Cal.Rptr.3d 382 (*Bullock*); *Boeken, supra,* 127 Cal.App.4th at p. 1700, 26 Cal.Rptr.3d 638.) We conclude, as did the trial judge, that the same is true of asbestos-related personal injury cases, and will confine our analysis to the reprehensibility and relationship to actual or potential harm factors

11 ArvinMeritor also argues that respondents' counsel conceded Bankhead was not financially vulnerable in closing argument, when counsel argued this case "isn't a financial transaction, so that's [financial vulnerability] not really important." To acknowledge that respondents' financial vulnerability need not be a key factor in the jury's deliberations was not a concession that it did not exist.

* Retired Associate Justice of the Court of Appeal, First Appellate District, assigned by the Chief Justice pursuant to article VI, section 6 of the California Constitution.

End of Document

EXHIBIT "C"

5 X 1

Grievance No. 738 11

Plant

GRIEVANCE FORM

NORTH AMERICAN ROCKWELL — National Agreement-UAW

Name of Grievant: LOCAL 274		Clock No.	Seniority Date
Classification	Dept. 30131	Shift ALL	Hourly Rate
Name of Protested Employee		Clock No.	Seniority Date
Classification	Dept.	Shift	Hourly Rate
Paragraph(s) of Agreement Violated: N- ; S- 104 ARTICLE XI	If none, so state: O.S.H 1910.132		Date Violation Occurred: 1-10-73

STEP 2: Statement of Dispute and Remedy Requested

At the present time we are still recieving lining from vendors that have not removed the asbestos dust from the rivet and bolt holes thus creating a serious health hazard to the operators of the riveters and the G.M.C.bench. This is a serious problem and must be stopped immediatly.

Signature of Grievant	Date Signed 1-11-73	Signature of Union Official: Joseph P Richey	Date Submitted 1-11-73

STEP 2: Management's Disposition

All vendors of brake blocks are being notified by the Purchasing Dept. to ensure that material received from them meets the specifications as set forth in the purchase agreement. At the same time, air sample tests are being made at the GM bench to see if a health hazard does, in fact, exist. Naturally, if a hazard is present, the Company will take necessary action to correct same. Grievance allowed as qualified.

Signature of Management Official: [signature]	Date Submitted 1-15-73	Signature of Union Official: Joe Richey	Date Received 1-15-73

STEP 2: If Management's STEP 2 Disposition is unacceptable, state reason for appealing

Signature of Union Official	Date Submitted	Signature of Management Official	Date Received

STEP 3: Management's Disposition

Signature of Management Official	Date Submitted	Signature of Union Official	Date Received

PREPARE IN QUADRUPLICATE: 1-Comm. Chairman, 2-Union, 3-Personnel Supervisor, 4-Supervisor (Use attachments - Do Not Write on Back of Form)

REV. 2-1-71

RWI 002460

cc: Messrs. L. Vander Roest
K. Davidson

January 12, 1973

Raybestos-Manhattan, Inc.
360 Southfield Office Plaza
17000 West 8 Mile Road
Southfield, Michigan 48076

Attention Mr. R. J. Harkin

Gentlemen:

This letter is being directed to all of our lining suppliers along with a copy of a grievance from our local labor representation, UAW Local 274. This grievance is self-explanatory and some of you have been cautioned of this condition previously and advised this situation cannot be tolerated. To those of you who have been supplying lining trouble free we appreciate your diligence, but to those who are negligent, we must advise that material found in the condition described, is subject to rejection and return at your expense.

It is requested that prompt attention be given this matter to insure that only acceptable material reaches our plant.

Very truly yours,

ROCKWELL-STANDARD DIVISION
North American Rockwell

V. E. Pilkington
Purchasing Agent

VEP/pm
Enclosure

RWI 002462

cc: Messrs. L. Vander Roest
K. Davidson

January 12, 1973

Molded Materials Division
P.O. Box 417
Ridgway, Pennsylvania 15853

Attention Mr. Ed Zacharias

Gentlemen:

This letter is being directed to all of our lining suppliers along with a copy of a grievance from our local labor representation, UAW Local 274. This grievance is self-explanatory and some of you have been cautioned of this condition previously and advised this situation cannot be tolerated. To those of you who have been supplying lining trouble free we appreciate your diligence, but to those who are negligent, we must advise that material found in the condition described, is subject to rejection and return at your expense.

It is requested that prompt attention be given this matter to insure that only acceptable material reaches our plant.

Very truly yours,

ROCKWELL-STANDARD DIVISION
North American Rockwell

V. E. Pilkington
Purchasing Agent

VEP/pm
Enclosure

RWI 002463

cc: Messrs. L. Vander Roest
K. Davidson

January 12, 1973

The Bendix Corporation
Friction Materials Division
420 North Center Building
20700 Greenfield Road
Oak Park, Michigan 48237

Attention Mr. J. L. Manion

Gentlemen:

This letter is being directed to all of our lining suppliers along with a copy of a grievance from our local labor representation, UAW Local 274. This grievance is self-explanatory and some of you have been cautioned of this condition previously and advised this situation cannot be tolerated. To those of you who have been supplying lining trouble free we appreciate your diligence, but to those who are negligent, we must advise that material found in the condition described, is subject to rejection and return at your expense.

It is requested that prompt attention be given this matter to insure that only acceptable material reaches our plant.

Very truly yours,

ROCKWELL-STANDARD DIVISION
North American Rockwell

V. E. Pilkington
Purchasing Agent

VEP/pm
Enclosure

RWI 002464

Bankhead_Pltfs' Exhibit no. 0467 pg4

cc: Messrs. L. Vander Roest
K. Davidson

January 12, 1973

Abex Corporation
American Brakeblok Division
1650 W. Big Beaver Rd., Suite 205
Troy, Michigan 48084

Attention Mr. C. E. Hubbard

Gentlemen:

This letter is being directed to all of our lining suppliers along with a copy of a grievance from our local labor representation, UAW Local 274. This grievance is self-explanatory and some of you have been cautioned of this condition previously and advised this situation cannot be tolerated. To those of you who have been supplying lining trouble free we appreciate your diligence, but to those who are negligent, we must advise that material found in the condition described, is subject to rejection and return at your expense.

It is requested that prompt attention be given this matter to insure that only acceptable material reaches our plant.

Very truly yours,

ROCKWELL-STANDARD DIVISION
North American Rockwell

V. E. Pilkington
Purchasing Agent

VEP/pm
Enclosure

RWI 002465

EXHIBIT "D"

OTHERS PRESENT

R. C. Wyatt	Raymark Corporation
E. W. Drislane	Friction Materials Standards Institute

The meeting was called to order by Mr. Weaver, Chairman, at 9:30 A.M.

MINUTES OF PREVIOUS MEETING

The Secretary read a summary of the Minutes of the Meeting held August 17, 1972. These minutes had been released and a motion for their acceptance had been obtained.

Upon motion duly made, seconded and unanimously passed, it was

RESOLVED: To accept the minutes of the August 17, 1972 meeting as distributed.

LABELING PRACTICES

The subject of labeling of finished friction materials was the first item on the agenda. While interpreting the OSHA requirements, it is noted that the hazardous warning label must be used where subsequent working of the materials would create airborne concentrations of asbestos fibers in excess of the exposure limits of the OSHA Standard. In many drilling and grinding operations without dust collectors, Committee Members indicated that the 10 fibers/cc ceiling concentration has been exceeded. [redacted]

P-FMSI- 0006

EXHIBIT E

56

MINUTES OF THE MEETING

of the

ASBESTOS STUDY COMMITTEE

Friday, February 16, 1973, at 9:30 A.M.
at the
Institute Office, E. 210 Route 4, Paramus, N.J.

MEMBERS PRESENT

I. H. Weaver, Chairman	Raybestos-Manhattan, Inc.
J. C. Hanning	Firestone Tire & Rubber Co., World Bestos Division
R. Wagner	Carlisle Corporation Molded Materials Division
E. H. Faiershand	Abex Corporation American Brakeblok Division

MEMBERS NOT PRESENT

T. Ball	H. K. Porter Company
W. Spurgeon	Bendix Corporation

The Chairman mentioned a survey made in the Metropolitan area concerning the relining of bakery trucks. The survey (conducted by an individual affiliated with Mt. Sinai Hospital) indicated that during radius grinding and drilling of brake linings that the airborne concentration of asbestos fibers was in excess of the 10 fibers/cc ceiling value.

The results of our survey on Member practices for labeling was reviewed. The results had been updated showing that 15 Members had replied of the 25 Members questioned. The results indicate that the Membership is not now labeling in accordance with the OSHA requirements, and while they interpret the OSHA regulations to require labeling where subsequent machining is expected, they are undecided as to exactly what they will do as regards labeling. In the survey, 2 Members indicated that a "binder" treatment makes it unnecessary for the Member to label: He believes he is complying with the labeling requirement "No label is required where asbestos fibers have been modified by a bonding agent....so that during any reasonably foreseeable use....processing...no airborne concentration of asbestos fibers in excess of the exposure limits...will be released."

It is the view of most Members of the Committee that the 5 fibers/cc (TWA) is exceeded in many areas such as inspection, drilling, and grinding where there is no adequate dust collection machinery. This could happen in garages where subsequent drilling and grinding is often required and where there is no adequate dust collection equipment. While the Members with OEM accounts are dealing with manufacturers who should understand the OSHA regulations, the biggest problem may be with the small shops that are exempt from the requirements of the OSHA regulations. In an interpretation of the regulations, it is apparent that where subsequent working of the material can raise the airborne asbestos concentrations above the limits that the manufacturer is required to label the material. Would labeling of cartons suffice? The Committee felt that, yes, this would be labeling that would meet the spirit of the OSHA Regulations. Would it be necessary to put the warning label on individual segments? A Member mentioned that in many cases the carton, or wrapping, for the brake lining is disposed of before the brake lining moves in to the working area. It was felt that if the warning label were on the carton or skid when it was received by the customer that the customer has some responsibility to pass the information on, and it was not necessary to label the individual segments. In the discussion concerning labeling requirements, the Members had to distinguish between "where subsequent working will be required" as against "where there is any possibility that subsequent working will be required." Again the point was made that with undusted linings from a manufacturer it is likely that customer inspection, or possibly opening of cartons, could show airborne fiber concentrations in excess of the 5 fibers/cc (TWA).

In discussion of the reasons to support or oppose labeling requirements, the question was raised as to whether objections centered around the cost of the labeling. Members indicated that the direct cost of labeling could be minimal. Most labeling could be put on by the box manufacturer at little additional cost to the friction material manufacturer. The rejoinder to this was that the Members felt that it was not the direct cost that bothered them. Rather, it is the indirect cost of the customer reaction to the warning label. Will the customer be tempted to purchase his linings from a manufacturer who does not put the warning label on the cartons, giving an advantage to the manufacturer who does not comply with the law or to the foreign manufacturer who is not aware of and cannot be punished by the law?

Upon motion duly made, seconded, and unanimously passed, it was

RESOLVED: That (1) where asbestos containing materials do not have the asbestos fiber completely locked in, or (2) where subsequent operations may be performed on asbestos containing materials, the hazardous labeling practice be adhered to in accordance with the Label Specifications in the OSHA Standards for Exposure to Asbestos Dust.

The Michigan requirements for labeling toxic and hazardous materials were discussed. These had been sent to the Members of the Committee in December 197[illegible] The Ford Motor Company had called to the attention of manufacturers the labeling requirements for hazardous substances pursuant to Act #282 of Michigan Public Acts of 1967. In the Michigan Standards there are specific labeling requirement concerned primarily with flammable and toxic materials. They do not specificall include asbestos. There are certain label requirements such as "DANGER, WARNING CAUTION." The Federal OSHA requirements for asbestos specify CAUTION, which is the least sensational of the type headings used. Of course, the DANGER warning in the Michigan regulations is for materials that would be almost instantly lethal. However, it is difficult to tie in asbestos to the specific label required. It is felt by the Committee Members that adherence to the Federal OSHA requirements should be the first step taken. While the issue cannot be specifically resolved, it is felt that compliance with the Federal OSHA regulat for asbestos would indicate compliance with the Michigan regulations. While it is desirable that any label used by the Members should also cover the requirem of various state codes, the first step would be to get the Members to label according to the Federal OSHA regulations.

As regards the Committee's recommendation to the Membership, a decision cannot made as yet on the size of the label. The OSHA regulations state that the labe shall be "of sufficient size and contrast as to be readily visible and legible." Mr. Weaver has received some data on typical caution labels now in use. Mr. Wy will furnish the Secretary the label type that his firm is using. Based on the labels now in use, the Secretary will distribute this information to the Member of the Committee for their review. With this information, the Committee should be in a position to propose label specifications to meet the Federal OSHA requirements.

NEW YORK TIMES MAGAZINE ARTICLE
"ASBESTOS, THE SAVER OF LIVES, HAS A DEADLY SIDE"

Copies of this article had been distributed to Members of the Committee. In addition, based on requests from Members not associated with the Committee, there were additional copies of the article distributed. As the brake lining industry as such was not a specific target, it was felt that no reply to the Times article was called for by the Institute. Mr. Weaver brought to the meeti copies of another article in the Saturday Review of the Society entitled "An Asbestos Town Struggles With a Killer." This particular article concentrated o the Johns-Manville plant in Manville, New Jersey. This, of course, was not their brake lining facility. Other than the specifics of the individuals from Manville, the article relied on much of the same background that appears in the article in the New York Times.

No action is planned on these articles, but they are almost required reading.

HEALTH EXAMINATION REQUIREMENTS OF OSHA

All Members of the Committee are aware of the medical examination requirements of the OSHA regulations. All have taken steps to comply with these requirements. The basics of the OSHA requirements are a preplacement examination, an annual examination and a requirement as regards termination of employment. These requirements are for workers who are "exposed to airborne concentrations of asbestos fibers." Note that there are no specific limits which tell whether an office employee who must make occasional trips into the factory area is exposed to airborne concentrations of asbestos fibers. The treatment of this is possibly best carried out by meeting the spirit of the regulations in including those employees in the examinations who are exposed to concentrations in excess of 1 fiber/cc (as used by one member).

The interesting service by International Compumatics was discussed. The International Compumatics Corporation, located in Princeton, New Jersey, propose a series of mobile medical tests which would include the full examination requirement, computerized medical records, at a price that appeared interesting to the Members. They will also provide a $500,000 "Errors and Omissions" insurance policy to the company for their program. Two of the Committee Members had investigated International Compumatics and while they were not long on experience as regards medical background, they apparently did have some computer capability. Also, it was felt that they may have the talent to accomplish what they propose to do. One Member planned to use the ICM services in one of their factories. Another Member considered using their services in a factory which later was scheduled for closing.

Another Committee Member suggested that while the International Compumetics proposals are interesting that it might be possible to do what they have done even more reasonably. They work with their local Tuberculosis Society in scheduling examinations in the mobile unit. The Tuberculosis Society does the X-Ray and pulmonary function examinations. The company doctor, in the meanwhile does the balance of the medical examination. Where local tuberculosis units wish to cooperate, this might be advantageous to both the manufacturer and the worker. In a review of the proposal by International Compumetics Corporation it is indicated that they will do everything that is required by the OSHA regulatio

The Institute Office will let the Membership know of the availability of the services of International Compumetics Corporation. We will not make a specific recommendation. The Chairman also mentioned that there was a New York group tha had proposed some similar services and that we should also let the Membership know about them.

One Member who has already planned to use the International Compumetics Corporat proposal will let us know his evaluation of them after they have finished their tests. In direct answer to the question from Mr. Iverson, President of Internat Compumetics Corporation, we will not give them our mailing list. Rather, we wil advise our Members of their services.

ASBESTOS BAG OPENING MACHINERY

The Institute had sent out to the Membership information on manufacturers of specialized bag opening machinery. The problem here is to keep the asbestos fiber concentrations minimized during bag opening and to properly dispose of any asbestos dust still left in the bags. The list of these manufacturing bag opening equipment should be expanded to include the:

Taunton Engineering Company
700 West Water Street
Taunton, Massachusetts 02780

INSTITUTE SEMINAR ON SAFETY AND HEALTH REGULATIONS

A Member mentioned that the dissemination of information on the bag opening machinery was interesting. Perhaps there is more information that can be given to the Members concerning disposal, collection, and other techniques used to comply with the various regulations. In response to a direct question, the Secretary indicated that as long as any proposed activity in the area stayed within the guidelines of our Constitution there should be no reason why activity could not be planned in this area. These would be specifically covered by a few objects in our Constitution such as maintaining and raising the standard of all products, and the cooperation with the United States Government through its various departments and bureaus, etc. The Members suggested a workshop or a seminar which concerned "Asbestos regulations as they affect the work place or the environment." It was recommended that the Committee's interest in such a seminar or workshop should be approved by the Institute before further action is planned.

Upon motion duly made, seconded and unanimously passed, it was

RESOLVED: That the Committee is interested in a workshop on the affect of Government safety and health regulations and proposed solutions thereto.

The Secretary is directed to have this Resolution reviewed so that the Committee could draw up a formal agenda for such a workshop. It would be the Committee's intention to have the Institute sponsor this workshop in some convenient location as soon as it is reasonably possible.

EPA EMISSIONS STANDARDS

The Environmental Protection Agency had advised the Secretary that they expected to have the new EPA Emissions Standards regulations published by the middle of February. The Committee Chairman advises that publication of the regulations has been delayed and it is now expected that these regulations will be issued possibly by February 23, 1973.

In the regulations there will be source reporting requirements. These have been extended to 90 days rather than the 30 days that had been indicated earlier. Control practices are still the basic means of applying the standard. Control practices will be required where visible emissions exist. It is not known whether waste disposal will be included in the regulations.

REPORT OF ADVISORY COMMITTEE ON ASBESTOS CANCERS

At the request of the Chairman, the Members of the Committee had been sent a copy of the report of the Advisory Committee on Asbestos Cancers. The meeting was held in Lyon, France, on October 5 and 6, 1972. This report had been reviewed by the Members of the Committee and there were no comments made thereon. The

Chairman advises that this report was to have restricted circulation and that the International Agency for Research on Cancer had not officially released the report. As we may have been premature in distributing the report, it is suggested that the Members restrict their circulation of any information contained in that report.

THE EPA STUDY OF PARTICULATE EMISSIONS FROM BRAKE LININGS AND CLUTCH FACINGS

The Bendix Corporation has been running tests on vehicles and on dynamometers to entrap the wear debris of brake linings and clutch facings. This study is under contract to the Environmental Protection Agency. Originally, the report was to have been made in 1972.

Dr. Spurgeon, of the Bendix Research Laboratories, advises that a final report should be published on these particulate emissions sometime within the next six weeks. There is no indication as to what these results show, as the work (at this stage) is not for publication.

STATISTICAL EVALUATION OF THE MEMBRANE FILTER METHOD

The Chairman distributed to the Committee the conclusions and recommendations in a report made for the Asbestos Information Association on the precision and accuracy of the Membrane Filter Method for measuring concentrations of asbestos fiber. This report was done by the LFE Corporation under contract for the Asbestos Information Association. The evaluation was not reviewed by the Committee Members at the meeting.

NIOSH RECOMMENDATIONS AS REGARDS HEAT STRESS

This particular area does not pertain specifically to asbestos. However, most of the brake lining and clutch facing manufacturers work with hot presses and various ovens. The recommendations as regards heat stress will affect most of the Members. A Member's work in the area of heat stress measurements was distributed for their review, along with a copy of the NIOSH recommendations. Again, as this information was new to some of the Committee Members the data was distributed and not discussed.

* * * * * * * *

There being no further business brought before the Committee, upon motion duly made, seconded and unanimously passed, it was

RESOLVED: To adjourn.

Adjourned at 1:00 p.m.

E. W. Drislane
Secretary

EXHIBIT "E"

EH

Internal Letter

Rockwell International

Date July 15, 1974

TO Address Messrs: J. Ensman
E. Bollard
A. Wrightnour

No.

FROM W.J. Robison Jr.

Address

Phone Ext. 258

Subject Lining Dust in Blocks as Received - Health Hazard.

Due to possible health hazard caused by excessive asbestos dust left in linings by vendors the following procedures will be implemented.

1. Receiving Inspectors will note Receiving Inspection Transfer with code 82 (cleanliness defect) when excessive lining dust is found.

2. Mr. Ensman will initiate SWO to clean and advise vendor of charge back.

3. Mr. Ensman will requisition a small "Shop Vac" to be used for dust removal in rework area.

4. Department Foremen (30A and B 31A and Midnights) and Inspectors will advise vendor, part number and quantities found in balance of shipments discovered with excessive lining dust in departments and transfer linings to rework area.

5. Mr. Ensman will implement items 2 & 3 to affect corrections.

W.J. Robison
W.J. Robison Jr.

dlf

cc: Rec. Insps. (7)
W. Moon
R. Gierok
V. Pilkington
Foremen & Insps. 30A & B
31A & Midnights (14)

RD 00494

EXHIBIT "F"

INDUSTRIAL HYGIENE SURVEY

ROCKWELL INTERNATIONAL CORPORATION
Brake Plant
Ashtabula, Ohio

March 23, 1976

INDUSTRIAL HYGIENE SURVEY

ROCKWELL INTERNATIONAL CORPORATION
Brake Plant
Ashtabula, Ohio

Clayton Environmental Consultants, Inc.

INTRODUCTION

Rockwell International Corporation retained Clayton Environmental Consultants to conduct a limited industrial hygiene survey at its brake plant in Ashtabula, Ohio. The purpose of the survey was to determine the concentrations of airborne asbestos fibers encountered by workers in the plant and to interpret the results in terms of a potential health hazard. The study was conducted on March 23, 1976, by Messrs. Dennis D. Zaebst and Gerald J. Schlaf of Clayton Environmental Consultants; results of the study are reported herein.

DESCRIPTION OF PLANT OPERATIONS

The Rockwell International Corporation brake plant in Ashtabula, Ohio is a single-level structure covering approximately 236,000 square feet. The basic function of the plant is the manufacture of brake shoe unit operations which includes welding, grinding, milling, machining, riveting, assembling, and packaging. Following are brief descriptions of those operations for which evaluations of workers' exposure to airborne asbestos were conducted.

Grinding Machines

Four separate brake shoe grinding stations were located in the plant, each consisting of a horizontal spindle, double-ended, pedestal grinder. Two grinders (No. 449-G, No. 460-G) located near the north end were exhausted to an indoor dust collector (baghouse) located just north of the No. 460-G grinder. The two grinders located near the south end of the plant were exhausted to one of two dust collectors located outside the main building at the south end of the plant.

Each of the grinders was fitted with a compressed air line connected to small diameter tubes which were located at the entrance to each hood. The purpose of these jets was to blow out dust trapped in the counterbored rivet holes of the brake shoes as the shoes were ground, thus making it unnecessary to clean the dust from the shoe once it was removed from the grinder jig. Noticeable "puffing" of dust was observed on several of the grinders as a result of the stream of air from the jets blowing in a direction counter to the airstream induced by the exhaust hoods. The No. 460-G grinder also had been fitted with a pasteboard enclosure and a secondary exhaust duct (four-inch flexible hose) which was connected to the main grinder exhaust duct. The purpose of this secondary enclosure and exhaust duct presumably was to capture dust blown out of the hood by the air jets. None of the other grinders was fitted with an equivalent secondary exhaust system.

At the time of the survey, four men per shift were engaged in grinding operations, one each at the No. 449-G and No. 460-G grinders, one at the No. 132 grinder, and two at the No. 048 grinder.

Riveting Machines

Nine separate brake shoe riveting stations were located in the plant, two of which were near the indoor Pangborn dust collector at the north end of the plant, and seven of which were located just south of the No. 048 and No. 132 grinders at the south end of the plant. The riveting operation basically consists of placing the brake pad over the shoe and riveting the pad in place. The riveted assembly then is transported to the grinding machines for OD grinding of the pad. None of the riveting machines were supplied with local exhaust ventilation.

Counterboring

At present, the counterboring operation is being phased out at the Rockwell plant in Ashtabula and only five percent of the brake pads used must be counterbored. At the time of the survey, only one counterboring machine was operated. No exhaust ventilation was provided at the counterboring machine.

Baghouse Maintenance

Routine baghouse maintenance operations at each of the three filter units consist of a mechanical shakeout at the end of each shift, and a mechanical shakeout with manual assist and removal of dust from the hopper by two maintenance workers twice a week during the lunch hour. Manual assistance during the latter procedure is required because the filter bags apparently plug up with dust near the bottom, preventing the dust from falling through the dump gate into the steel bin below. The following is a brief description of the procedure as observed during the survey.

The two mechanics opened the doors of the baghouse enclosure and manually shook the bags near the bottom with their hands or a stick while the pneumatic vibrator and electric shaker were operating. After the bags were unplugged, the men opened the doors which enclosed the tote bins underneath, leveled the surface of the dust in the tote bins with their hands or a stick, removed the two tote bins from the enclosure, pulled up the plastic bag which was in the tote bin, wrapped the plastic bag closed, and then tied it. One of the men then closed the dump gate but did not replace the tote bins or plastic bags under the dust collector. It was noted that during the shakeout procedure the plastic bags were not tied to the bottom of the hopper but were left folded back over the tote bins; as a result, considerable puffing of dust occurred when the men opened the doors enclosing the tote bins after the shakeout was completed.

Similar procedures are followed approximately twice a week to unplug the outdoor dust collectors. No tote bin enclosure was present on either of the outdoor units as it was on the indoor unit. However, plastic bags in the tote bins were tied to the bottom of each hopper during shakeout. The total time involved for the manual shakeout procedure was about ten to fifteen minutes for both the indoor and outdoor baghouses.

During shakeout of the outdoor units, one of the bag vibrator pins broke allowing the bags to sag. This filter unit was shut down with the intention to make repairs later in the afternoon. If the No. 048 or No. 132 grinders had been operated with one filter unit shut down, the other unit would have been required to provide all of the exhaust volume for both grinders, and the total exhaust volume at the grinders would have been appreciably reduced. These grinders were subsequently shut down until the appropriate repairs had been made.

POTENTIAL HEALTH HAZARD ASSOCIATED
WITH EXPOSURE TO ASBESTOS

Asbestos is a generic term referring to various mineral silicates. The types used most widely in industrial applications include chrysotile, or "white asbestos" (a hydrated magnesium silicate), amosite, or "grey asbestos" (an iron magnesium silicate), crocidolite, or "blue asbestos" (a sodium iron silicate), tremolite (a calcium magnesium silicate), and anthophyllite (another iron magnesium silicate). Of these, chrysotile accounts for over 90 percent of the total usage of asbestos in this country, with amosite and crocidolite being the only other types used to any significant extent.

Asbestos exists naturally in bundles of extremely fine fibers which can be subdivided easily into many smaller fibers. The potential health hazard associated with exposure to asbestos is that of inhalation of airborne fibers resulting in a type of pneumoconiosis referred to as "asbestosis." Small asbestos fibers can pass readily through the upper respiratory tract and be deposited in the terminal bronchioles of the lung. There, they produce a local irritation which the body attempts to overcome by initiating a tissue response resulting in the encapsulation of the fibers and consequent formation of "asbestos bodies." If sufficient quantities of fibers are inhaled over an extended period of time, a generalized diffuse peribronchiolar fibrosis can develop. This pulmonary fibrosis can impair the transfer of oxygen across the aveolar membranes and result in respiratory insufficiencies, or even cardiac failure. It has been determined, through toxicological and epidemiological studies, that long fibers, 20 to 50 microns in length, are most active in the production of the fibrosis. Fibers shorter than about two microns in length, are practically without an irritating effect. There is some evidence that other minerals having fibrous characteristics, with the exception of fibrous glass, can produce similar reactions.

Many recent studies have indicated an association between exposure to asbestos in both industrial and urban atmospheres and an increase in a relatively rare type of lung cancer known as mesothelioma. Although it has not been possible to establish a connection with asbestos in <u>all</u> cases of this disease, there is a strong correlation between exposure to crocidolite and occurrence of mesotheliomas. Other types of asbestos have been implicated to a much lesser extent. However, this "new hazard" has received much public attention because fibers per cc of air and, with the exception of the No. 662 riveter operator, were well within the standard of two fibers/cc to become effective July 1, 1976. It should be noted that the estimated eight-hour, time-weighted average exposures of the No. 048 grinder operator and the No. 116 riveter operator exceeded the proposed OSHA standard of 0.5 fibers/cc.

As indicated in Table I, the two mechanics engaged in manual shakeout of both the indoor and outdoor filter units were exposed to peak levels of 16 fibers/cc and 11 fibers/cc during eleven and nine-minute exposure periods at the indoor and outdoor filter units, respectively. These concentrations exceeded both present and proposed OSHA standards for ceiling exposures.

CONCLUSIONS

The following conclusions are presented on the basis of observations and measurements made during this survey.

1. With the exception of the No. 662 riveter operator, eight-hour, time-weighted exposures of those grinder/operators, riveters, and counterbore machine operators whose exposures were evaluated, were within the OSHA limit of two fibers/cc of air due to become effective July 1, 1976. The No. 662 riveter operator's estimated eight-hour, time-weighted average exposure to asbestos fibers was essentially equal to the two fibers/cc limit. This result indicates that due to the normal variability of exposures from day to day, this operator's exposure could very well exceed the applicable limit (two fibers/cc on a time-weighted average basis) on any given shift.

2. The estimated, eight-hour, time-weighted average exposures of the No. 048 grinder operator and the No. 116 riveter operator on the day of the survey exceeded the proposed OSHA exposure limit of 0.5 asbestos fibers/cc averaged over an eight-hour workday. Should this proposed standard become effective, improved engineering control of dust at grinding and/or riveting stations may become necessary.

3. The data obtained during the survey at the Rockwell plant apply only to the conditions

in the plant on the day of the survey. Conditions, such as substantially increased production levels, or handling of brake shoes which are substantially larger or which contain a higher percentage of asbestos fiber, conceivably might result in exposure levels higher than those documented during this survey. The type and size of brake shoes handled by each operator are listed in Table I. As indicated, diameters of brake shoes handled ranged from about 12 to 16.5 inches, and widths ranged from about 2.25 inches to 7 inches. Diameters and widths of shoes handled at any time at the plant range from 9 inches by 2 inches to 22 inches by 10 inches, respectively. The sizes of shoes handled in the plant during the survey were about midway between these two extremes and were representative of a normal run at the plant, comprising about 65 to 75 percent of shoes produced.

4. Exposures of maintenance operators during manual shakeout and removal of dust from the indoor and outdoor dust collectors (baghouses) exceeded in both instances Federal standards for peak exposures to asbestos fibers. The relatively high exposures were due in large part to the necessity of opening the doors of the enclosure and manually shaking the filter bags to remove excess buildup of dust plugging the bottoms of the bags. In the case of the indoor filter unit, failure to tie the plastic bag lining of the tote bin to the exit port of the filter unit during the dumping of the dust undoubtedly was a contributing factor in the dust exposure.

RECOMMENDATIONS

1. The source of the No. 662 riveter operator's relatively high exposure should be investigated further. It was observed that the operator was wearing a disposable, single use respirator; he should continue to wear a respirator approved for protection against asbestos-containing dust until his exposure is reduced substantially by engineering control, administrative control (e.g., rotation of personnel between jobs), or by a change in work procedure. It should be noted that use of personal respiratory protective devices is acceptable under present and proposed OSHA standards only as an interim

measure until engineering or work practice controls have substantially reduced exposures to the extent possible.

2. Shakeout and removal of dust from the hopper should be performed more frequently to help prevent plugging of the filter bags. Manual shaking of the bags by hand should not be required during emptying of the hopper. If more frequent shakeout and dust removal does not eliminate the need for hand shaking of the filter bags, further engineering evaluation should be conducted to determine the reason for the malfunction. Until the situation can be corrected, maintenance men should continue to wear respirators approved for protection against asbestos dust whenever manual shakeout is required.

3. The plastic bags lining the tote bins should be tied securely to the exit port of the hopper to prevent dispersal of the dust while it is being transferred into the bag (i.e., while the dump gate is open).

4. Although exposures of grinder operators were all within current acceptable Federal exposure limits, improved control of dust at these machines may become necessary should the proposed asbestos standard (Federal Register 47652, October 9, 1975) become permanent. It is therefore recommended that the use of the compressed air nozzles in place at the face of the ~~grinder~~ hoods be evaluated further to prevent the puffing of dust noted during the survey. Although a full engineering evaluation was beyond the scope of the survey, the following observations were made: Two brake shoes at a time are placed on each rotating grinding fixture, with open space between each shoe. The space varies with the size of the linings but can be as great as one third of each revolution of the fixture. Most of the dust was blown out of the hood through the open gap between the brake shoes. Shutting off the airflow when a brake lining is not in the compressed air path might help to prevent the dispersion of dust from the hood. Cams on the bottom of the fixture could operate a limit switch or limit valve to shut off and turn off

the air at the appropriate time. Where feasible, the addition of filler plates to the rotating fixture (to fill the areas between the brake linings) might also reduce the dispersion of dust from the hood.

This report prepared by: Dennis D Zaebst
Dennis D. Zaebst
Industrial Hygienist

This report approved by: Robert E Soule
Robert D. Soule, P.E.
Vice-President
Director, Industrial Hygiene Services

TABLE I-A

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Plant ROCKWELL INTERNATIONAL CORP. Material(s) Asbestos

Ashtabula, Ohio

Date 1976	Sample Number	Description	Sampling Period Start	Sampling Period Stop	Sample Weight	Sample Volume (Liters)	Concentration: Fibers >5 µm / cc	Concentration: TWA Conc: Fibers/cc	Concentration: Estimated 8-hr. TWA Exposure *
		449-G Grinder							
3/23	AA-22	Operator breathing zone	09:10	11:32		263	0.14	0.29	0.27
3/23	AA-03	Operator breathing zone	12:55	15:19		230	0.44		
		Brake shoe: 2740-F1748 Diam: 16", Width: 3"							
		132 Grinder							
3/23	AA-28	East side grinder, operator breathing zone	09:45	11:40		196	0.088	0.35	0.31
3/23	AA-19	East side grinder, operator breathing zone; exhaust not operating, operator stopped work at 13:08	13:02	13:08		6	<0.48		
3/23	AA-04	East side grinder, operator breathing zone	14:14	15:25		80	0.79		
		Brake shoe: 2740-E-1123 Diam: 12", Width: 4"							
		048 Grinder							
3/23	AA-23	East side grinder, operator breathing zone	09:45	11:42		194	0.16	0.88	0.81
3/23	AA-15	East side grinder, operator breathing zone	14:17	15:26		132	2.1		
		Brake shoe: 2740-T-1918E							

* Based on a 440 minute exposure period during

RWI 002451

Bankhead_Pltfs' Exhibit no. 0455 pg11

TABLE I-B

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Plant ROCKWELL INTERNATIONAL CORP.
Ashtabula, Ohio

Material(s) ____

Date 1976	Sample Number	Description	Sampling Period Start	Sampling Period Stop	Sample Weight
		460 GRINDER			
3/23	AA-13	East side grinder; operator breathing zone	09:15	11:38	
3/23	AA-01	Operator breathing zone; operator working at both east and west grinders	12:57	15:21	
		Brake shoe: 2740-693-551-D Diam: 16", Width: 2.25"			
		662 RIVETER			
3/23	AA-08	Operator breathing zone	09:22	11:35	
3/23	AA-27	Operator breathing zone, stopped work at about 14:00	12:58	14:02	
		155 RIVETER			
3/23	AA-16	Operator breathing zone	09:32	11:44	
3/23	AA-09	Operator breathing zone	13:06	15:29	
		Brake shoe: 2240-C-2577 Diam: 16.5", Width: 7"			

* Based on a 440 minute exposure period [illegible]

Bankhead_Plffs' Exhibit no. 0455 pg12

Asbestos

Sample Volume (Liters)	Concentration		
	Fibers <5 µm / cc	TWA Conc. Fibers/cc	Estimated 8-hr TWA Exposure
206	0.11	0.26	0.24
196	0.40		
255	2.8	2.1	1.9
112	0.64		
154	0.19	0.33	0.30
264	0.51		

TABLE 1-C

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Plant ROCKWELL INTERNATIONAL CORP.
Ashtabula, Ohio

Material(s) Asbestos

Date 1976	Sample Number	Description	Sampling Period Start	Sampling Period Stop	Sample Weight	Sample Volume (Liters)	Concentration Fibers >5 µm/cc	TWA Conc. Fibers/cc	Estimated 8-hr TWA* Exposure
		116 RIVETER							
3/23	AA-21	Operator breathing zone	09:56	11:45		230	0.29	0.75	0.69
3/23	AA-17	Operator breathing zone Brake shoe: 2240-T-1958 Diam: 15", Width: 4"	13:09	15:30		285	1.1		
		491 COUNTERBORING							
3/23	AA-25	Operator breathing zone	09:24	11:35		246	0.46	0.26	0.24
3/23	AA-05	Operator breathing zone Brake-shoes: 2240-R1266 and 2740-F500-048 Diam: 16", Width: 3.5"	12:57	15:24		297	0.078		
		SHAKEOUT OF INDOOR BAGHOUSE							
3/23	AA-26	Maintenance operator No. 1, during shakedown and emptying of Pangborn baghouse (indoor unit)	12:00	12:11		17	16	-	-
3/23	AA-14	Maintenance operator No. 2, during shakedown and emptying of Pangborn baghouse (indoor unit)	12:00	12:11		21	1.2	-	-

* Based on a 440 minute exposure period

RWI 002453

TABLE I-D

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
INDUSTRIAL HYGIENE SAMPLING SUMMARY

Plant ROCKWELL INTERNATIONAL CORP. Ashtabula, Ohio

Material(s) Asbestos

Date 1976	Sample Number	Description	Sampling Period Start	Sampling Period Stop	Sample Weight	Sample Volume (Liters)	Concentration: Fibers >5 μm / cc	Concentration: TWA Conc; Fibers/cc	Concentration: Estimated 8-hr TWA Exposure
		SHAKEOUT OF OUTDOOR BAGHOUSES							
3/23	AA-18	Maintenance operator No. 1; during shakeout and emptying of baghouses (outdoor units)	12:23	12:32		14	1.2	-	-
3/23	AA-07	Maintenance operator No. 2; during shakeout and emptying of baghouses (outdoor units)	12:23	12:32		13	11	-	-
		MISCELLANEOUS SAMPLES							
3/23	AA-24	On foreman's desk opposite Pangborn unit	10:12	11:45		191	0.030	-	-
3/23	AA-12	On foreman's desk opposite Pangborn unit	12:54	15:20		318	0.027	-	-
3/23	AA-20	Breathing zone of department No. 36 fork-lift truck operator	09:30	11:35		130	1.2	-	-
3/23	AA-30	Breathing zone of department No. 36 fork-lift truck operator	13:21	15:27		174	0.15		
3/23	AA-29	Foreman's desk; 230 feet north of No. 460 grinder and 200 feet east of No. 449 grinder	15:15	15:52		76	<0.038	-	-
3/23	AA-10	Foreman's desk, 90 feet west of Pangborn dust collector	15:21	15:58		64	0.045		-
3/23	AA-02	On Cincinnati Acramatic cabinet, 60 feet northeast of	[illegible]						

EXHIBIT "G"

Internal Letter

Rockwell International

Date May 28, 1976

No.

TO R. Martello

Address

FROM Elona Hoffman, R.N.

Address

Phone

Subject: Clayton Report

In reference to the Clayton report on asbestos, we should immediately check into some serious problems.

1. Maintenance men working with asbestos dust collectors not wearing adequate respirators. Proper ones must be used which can be obtained from the Dispensary.

2. Shakedown should be performed more frequently.

3. If maintenance men must reach in to shake bags, we must provide protective clothing and showers.

4. When the doors are opened, asbestos dust falls out and blows around the area including through the open door into the shop.

5. Garbage disposal containers should be labeled to indicate that asbestos dust bags are inside.

Elona M. Hoffman, R.N.

/dj

FORM 131-A REV. 2-75

RWI 002439

EXHIBIT "H"

TO: MARGARET MALEDON
DEPT. 845 4-4-82

Sweeney, Mahon and Vlad

Attorneys and Counselors
Suite 1205, Bond Court
1300 East Ninth Street
Cleveland, Ohio 44114
(216) 696-0606

Martin L. Sweeney (1885-1960)
Robert E. Sweeney
William E. Mahon
Emil J. Vlad
Timothy M. Bittel
Thomas W. White
Sheldon D. Schecter
Mark Wintering

Branch Office:
Cedarwood Landing
5811 Canal Road
Valley View, Ohio 44125
(216) 524-0867

March 3, 1978

Ms. Elona Hoffman
Supervisor, Safety and Health
Rockwell International,
Highway Brake Division
3500 North Ridge, West
Ashtabula, Ohio 44004

Dear Ms. Hoffman:

As you recall, I represent your former employee, Russell L. Clutter, who is now hospitalized at University Hospital in Cleveland, Ohio, because of his condition of pleural mesothelioma, a form of cancer which is unique to asbestos exposure.

I understand that Thomas W. White of my staff has recently spoken with you by telephone, and has explained that it is our intention to pursue a third-party action on behalf of Mr. Clutter against the manufacturers of asbestos-containing brake liners utilized by Rockwell International, and to which products Mr. Clutter was exposed during his period of employment from March 8, 1962 until April 25, 1964.

In speaking with Mr. White, I understand that you would direct my inquiry to a member of the Highway Brake Division of Rockwell, who would contact me or Mr. White to supply us with the identity of those national manufacturers who supplied Rockwell with the asbestos brake linings during the above-stated period.

Your cooperation and kindness in this matter is certainly appreciated.

and I look forward to hearing from a representative of Rockwell at an early date for further discussion regarding the identity of those manufacturers who supplied Rockwell.

Very truly yours,

ROBERT E. SWEENEY

RES/sb

EXHIBIT "T"

Highway Brake Division
3500 North Ridge West
Ashtabula, OH 44004
(216) 998-3100

Rockwell International

April 21, 1978

Sweeney, Mahon and Vlad
Attorneys and Counselors
Suite 1205, Bond Court
1300 East 9th Street
Cleveland, Ohio 44114

Attention: Mr. Robert E. Sweeney

Dear Mr. Sweeney:

Per your request, following are the addresses of the concerns who supplied brake linings for the Rockwell International Brake Plant:

Abex Corp. - Suite 710, 3001 W. Big Beaver Rd., Troy, Mich.
Molded Material, Div. of Carlisle Corp. - Ridgeway, Pa.
Raybestos Manhattan - Southfield, Michigan
Bendix Friction - Troy, New York
Thermoid (H. K. Porter) - Huntington, Indiana
Johns-Manville - Ken-Caryl Ranch, Denver, Co. 80217
World Bestos - 112 S. 26th St., New Castle, Ind. 47362
S. K. Wellman - Bedford, Ohio
Gatke - Box 329, Winona Ave., Warsaw, Ind. 46580
Maremount - 700 W. Caroline, Paulding, Ohio 45879
P. T. Brake Lining - 18 Shepard St., Lawrence, Mass. 01842
Auto Friction - 652 Andover St., Lawrence, Mass. 01842
Grizzley (now Maremont)

Very truly yours,

HIGHWAY BRAKE DIVISION
Rockwell International Corp.

Elona M. Hoffman, R. N.
Supervisor, Safety and Health

/dj

cc: Thomas W. White

EXHIBIT "J"

Internal Letter Rockwell International

Date: April 17, 1979

No:

TO: (Name, Organization, Internal Address)
Mr. Mike Budd
Ashtabula Brake

FROM: (Name, Organization, Internal Address, Phone)
Mr. W. Long
Troy AU-1
8/525-1067

Subject: **ASBESTOS**

cc - [redacted])
George Babie) Ashtabula Brake
Elona Hoffman)

I visited your facility on April 5, 1979 at your request to review your shipping procedures and to determine whether a conflict exists with our present procedures and current legislation.

For those assemblies that you ship on a pallet with a plywood top, banded and stretch-wrapped, it is my opinion that protection and labelling is not necessary. Movement and vibration during shipment will be minimal and the generation of fibers will not be a problem.

However, you do ship some loose assemblies and you do return damaged linings loose in tubs. It is my opinion that these should be totally enclosed and labelled because the possibility of generating asbestos fibers during shipment is very real. If pallets are used, the spaces between the boards should be closed either with plywood or cardboard. The top of the containers will likely be plywood and the whole should be covered in stretch wrap. At this time I would not consider rounding off the sharp corners of the plywood tops or bottoms.

Bill Long

Bill Long

WL/eap

Anderson

ROCK 00469

Bankhead_Pltfs' Exhibit no 0505 pg1

EXHIBIT "K"

File — OSHA

-NOTICE-

PROCEDURE FOR DUMPING LINING DUST

FROM PANGBORN DUST COLLECTOR

1. Protective paper coveralls, hood and respirator must be put on prior to start of dumping operation. Coveralls and hoods are available from Crib, respirator from Dispensary. These items are not to be removed until the entire procedure is completed. Do not remove respirator until coveralls and hood have been discarded into dust cart.

2. Chain off aisle. There is to be no unprotected truck or pedestrian traffic while dumping procedure is in process.

3. Check to be sure plastic bag is securely tied to hopper. Open hopper gate and attach air line to vibrator if so equipped. Start shaker, shake for 5 minutes then turn off.

4. When hopper is empty, check to see if plastic bags are full. If not, leave in position, close hopper gate, and close doors of cart area.

5. If any dust has spilled, pick up immediately with dust collector suction hose.

6. If bag is full, tie off before removing cart. Remove cart to back yard immediately. Do not leave for later removal. Close doors of cart area whenever you leave the area.

7. If full cart is removed, replace with empty cart and tie new bags on to hopper, close hopper gate, and close door on cart area.

8. Remove aisle chains.

9. Discard protective clothing and remove respirator as per instructions item #1.

10. If you have any questions regarding dumping procedure, ask before you act.

Carl Holt

Carl Holt
Maintenance Foreman

RWI 002455

Internal Letter Rockwell International

Date: June 14, 1979

No.:

TO: (Name, Organization, Internal Address)

All Supervision

FROM: (Name, Organization, Internal Address, Phone)

Elona Hoffman, R.N.

Subject: Review- Asbestos Handling Procedure

Work area around lining grinding and riveting operations must be vacuumed clean by the operator at the end of each shift. The work area must not be blown clean using compressed air or brooms.

Operators must vacuum empty lining boxes before the boxes are thrown into the yellow dumpsters.

Each layer of lining coming from vendors must be checked for excess dust. Again, small amounts of dust must be vacuumed from the boxes. Large concentrations of dust in the boxes is cause for return to the vendor with follow-up through purchasing.

We must work to contain any asbestos dust as best we can in order to remain under the maximum Federal requirement of 2 fibers per cubic centimeter.

Elona

/hg

Form 131-R Rev. 3-76

RWI 002456

Milestone Chart	LEGEND	PROGRAM TITLE: ASBESTOS MONITORING	W. E. FRIEDEL	FY-80

	MILESTONES	OCT	NOV	DEC	JAN	FEB	MAR.	APR	MAY	JUN	JUL	AUG	SEP
1	DEPT. 32 044 RIVETER										▽		
2	" " 043 RIVETER										▽		
3	" " 022 RIVETER										▽		
4	" " 116 RIVETER										▼		
5	" " 755 RIVETER										▽		
6	" " 132E SHOE GRINDER										▽		
7	" " 132W SHOE GRINDER										▽		
8	" " INSPECTOR										▽		
9	" " SALVAGE										▽		
10	DEPT. 33 153 RIVETER						▼				▽		
11	" " 154 RIVETER										▽		
12	" " 156 RIVETER										▽		
13	" " 158 RIVETER										▽		
14	" " 755 RIVETER										▽		
15	" " 098N SHOE GRINDER										▽		
16	" " 048S SHOE GRINDER		▽						▼		▽		
17	" " GM BENCH (NORTH)		▽								▽		
18	" " GM BENCH (SOUTH)									▼		▽	
19	" " INSPECTOR											▽	
20	" " SALVAGE											▽	
21	DEPT. 36 042 RIVETER										▼	▽	
22	" " 438 RIVETER											▽	
23	" " 551 RIVETER											▽	
24	" " 595 RIVETER											▽	
25	" " 662 RIVETER											▽	
26	" " 761 RIVETER											▽	
27	" " 460E SHOE GRINDER											▽	
28	" " 460W SHOE GRINDER		▼									▽	
29	" " INSPECTOR											▽	
30	" " SALVAGE											▽	
31	" " JOB SETTER											▽	
32	DEPT. 38 449 SHOE GRINDER											▽	
33	" " "PAINT" LININGS											▽	
34	" " CURE LININGS											▽	
35	" " BOND OVEN		▼									▽	
36	DEPT. 50 ASSEMBLY BENCH #2		▼									▽	
37	" " ASSEMBLY BENCH #28											▽	
38	DEPT. 09 LABORER - DEPT. 36												▽
39	" " LABORER - DEPT. 33												▽
40	" " TRACTOR - LABORER												▽
	DEPT. 05 RECEIVING INSPECTOR												▽

RWI 002457

EXHIBIT "L"

Interoffice

Date August 16, 1982

To Mr. R. D. Randolph
Troy - D-212

From Ronald L. Wissink
Oshkosh

cc: R Barnikis

Subject JOHNS-MANVILLE - RESPONSE TO ASBESTOS

I have enclosed a letter requesting our status of position to asbestos use. As a Corporation, I have not seen a position stated.

At plant, we, of course, do not control the parts, being special to use.

We have taken a position to maintenance-type items, such as roof and furnace repair. We stipulate the use of fiberglass on roofs and demand asbestos out of products used in furnace restoration.

It may be our Corporation is addressing this as an overall issue. I do not feel I can as a plant, unless you feel differently.

Ronald L. Wissink

Ronald L. Wissink

ms

enclosure

RWI 004983

Bankhead_Pltfs' Exhibit no. 0471 pg2

Johns-Manville Corporation

Ken-Caryl Ranch
Post Office Box 5108
Denver, Colorado 80217

John A. McKinney
Chairman of the Board and
Chief Executive Officer

Mr. Ronald L. Wissink
Rockwell International Inc.
PO Box 2848
Oshkosh, WI 54903

Dear Mr. Wissink:

General Motors is a large user of asbestos fibre and asbestos-containing products. In addition to millions of sets of brake linings and clutch facings, asbestos is used in gaskets, sound deadeners, adhesives and electrical components in GM vehicles. Also, they use many construction products such as asbestos-cement pipe and sheets, rolled roofing and floor tile for their plants.

General Motors has a long-standing commitment to protect the health and well-being of its employees, the general public and the environment. We applaud that commitment, and the conscientious manner with which it is applied.

General Motors' policy toward asbestos was presented in a paper by T. O. Mathues, Vice President Manufacturing Staff, to the AIA Government Industry Conference. It is attached for your review.

We believe it is in the best interest of society that industry take responsible positions similar to that of General Motors on issues such as this, where emotionalism has tended to skew rational direction. If your company has taken a position similar to General Motors regarding asbestos, or plans to, we would appreciate hearing from you.

Very truly yours,

JAMcKinney

EXHIBIT "M"

Letter

September 10, 1982

No.

TO: R. D. Randolph

cc 4/15 Boise ... Dr

FROM: R. M. Hays
A-135
5-1467

Subject: Response to Johns-Manville - Rockwell Asbestos Policy

RECEIVED
SEP 15 1982
OSHKOSH, WIS.
R. L. WISSINK

cc: G. J. Flannery
D. Helfrich
W. Long

Neither Rockwell automotive or Pittsburgh Corporate have developed formal policy positions regarding the use of asbestos products either in our facilities or in our products (brake lining). We would suggest no response to the J-M letter or a response indicating Rockwell does not have a formal policy position.

As background information on this subject, Government Relations is monitoring regulatory efforts to change the Federal OSHA Standards concerning asbestos from a maximum exposure level of 2 fiber per cc to a .5 fiber level. In Canada and in Germany the regulatory exposure level maximum has recently been changed from 2 fiber to 1 fiber.

Although a reduction to .5 fiber level would not necessarily inhibit Rockwell's use of asbestos brake lining in our manufacturing process it could very well eliminate the production of asbestos linings by the primary manufacturers. As a result, our brake engineering along with our lining suppliers are investigating alternate materials.

In addition, recently introduced Federal legislation, H.R.5735, would attempt to federalize the compensation of individuals who are disabled as a result of occupational exposure to asbestos. The legislation is very liberal in its interpretation of cause of lung disorders and certain forms of lung cancer would be irrebuttably presumed to have resulted from exposure to asbestos.

The use of asbestos products in our facilities either in maintenance or manufacturing equipment is, as Ron Wissink indicates, a plant decision in conjunction with Bill Long or Dan Helfrich.

R

R. M. Hays

/hrn

Att.

RECEIVED
SEP 10 1982

RWI 004985

EXHIBIT "N"

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF ALAMEDA

---oOo---

GORDON BANKHEAD and EMILY BANKHEAD,

Plaintiffs,

vs. No. RG10502243

ALLIED PACKING & SUPPLY, INC.

Defendants.

/

VIDEOTAPED DEPOSITION OF BRUCE KETCHAM

(PMQ - ARVINMERITOR, INC.)

Taken before RENEE C. WILLIS

CSR No. 4597

September 30, 2010

A. Rockwell International.

Q. And were you first employed with Rockwell in 1978?

A. That's correct.

Q. Since 1997 when it switched over from Rockwell to Meritor, have you had any involvement in product analysis with regard to existing product -- asbestos product?

MR. CANONI: Objection to form.

THE WITNESS: Could you clarify the question?

MR. SATTERLEY: Sure.

BY MR. SATTERLEY:

Q. Well, let me ask you this question: Since you began working for Meritor, was Meritor making an asbestos-containing product?

A. Yes, they did still manufacture some at that point in time.

Q. What type?

A. Asbestos-containing brakes for a few off-highway vehicles.

Q. What type of off-highway vehicles?

A. I'm not quite sure which ones they were still used on at that point in time.

Q. When is the last time Meritor made an

asbestos-containing product?
A. It was either '99 or 2000.
Q. And in your work as manager of product analysis in '99 or 2000, did you actually evaluate the brake products for trying to figure out how much asbestos may be released?
A. No.
Q. Back when you worked at Rockwell -- we're going to go back through your career a little bit. You started in '78, correct?
A. That's correct.
Q. And were you at the Florence, Kentucky location?
A. That's correct.
Q. And did you start out as sales manager?
A. Sales order manager.
Q. And what type of job did you do as a sales order manager?
A. I supervised the sales order staff at the facility.
Q. And the Florence, Kentucky facility, was that a manufacturing facility?
A. No, it was not.
Q. What did they do there?
A. It was an aftermarket distribution center.

And in this set of interrogatories on page 22, there's some discussion there on warnings on the product. Do you see that?

A. Yes, sir.

Q. And what is the first -- according to the Answers to Interrogatories that you signed off on, when is the first time Rockwell warned on the product itself?

A. The early 1980s.

Q. And did they use the word "warning"?

A. No, they did not.

Q. What word did they use to alert someone about this issue?

A. The full statement is, Caution: Contains asbestos fibers, avoid creating dust. Breathing asbestos dust may cause serious bodily harm.

Q. Is there an explanation mark after the word "caution"?

A. No, there is not.

Q. Does the statement that you just read, does it mention cancer?

A. It does not mention the word "cancer," no.

Q. Does it say what type of bodily harm could occur?

A. It says it could be serious.

Q. Does it describe any precautionary measures that should be taken?
A. Yes.
Q. What precautionary measures does it --
A. It states to avoid creating dust.
Q. Does it describe any tools or equipment that should be utilized to assist in that fashion?
A. No, it does not.
Q. Do you have an understanding based upon your involvement in this litigation and being a corporate representative for many years what the primary purpose was for this label?
MR. CANONI: Objection; vague, ambiguous, lacks foundation, calls for speculation.
THE WITNESS: It would be there to provide notice to the end user.
BY MR. SATTERLEY:
Q. Notice of what?
A. Of what the statement says.
Q. And have you seen any documents or internal memorandums from the corporation on why Rockwell in the early 1980s put this label with the word "caution" on it, why they did that?
A. I don't recall seeing any documents regarding that, no. There may be some in the

EXHIBIT "O"

Internal Letter

Rockwell International

Date: September 5, 1986

No.: BJB230.TXT

TO: (Name, Organization, Internal Address)

Distribution

FROM: (Name, Organization, Internal Address, Phone)

Barbara Boroughf
Troy
Comnet 526-1688

Subject: NEW ASBESTOS STANDARD - LABELING

REDACTED

The new asbestos standard requires warning labels to "be affixed to all . . . products containing asbestos , . . or to their containers."

Therefore, please ensure that all parts shipped with asbestos linings and service packaging boxes have a label stating:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE
HAZARD

In addition to the above, label specifications are to comply with OSHA's Hazard Communication Standard by identifying your plant and plant address.

It is my understanding that parts are shipped either on racks, banded on skids, shrinkwrapped on skids or in service packaging boxes. You should ensure each rack, skid and box is labeled.

REDACTED

If you are not directly responsible for labeling, please coordinate this requirement with the appropriate person at your plant.

Should you have any questions regarding this request, please contact me.

Barbara J. Boroughf

Barbara J. Boroughf
Regional Safety Manager

BJB:jb

Distribution:

J. Cicero	- New Castle	G. Ringe	- Oshkosh
E. Hoffman	- Ashtabula	C. Robinson	- York
S. Jeffries	- T/C	J. Rush	- Kenton
J. Kilakowske	- Florence	T. Vance	- Newark
M. McConnell	- Tilbury	R. Weinzierl	- Winchester

ROCK 00478