

## Exhibit C

### Costa v. FCA US LLC Evidence Highlights

#### Exhibit C1.1 Jury Verdict Form

Case 1:20-cv-11810-ADB Document 343 Filed 11/14/23 Page 2 of 2

#### **Unfair Act or Practice**

3. Do you find that Mr. Soares has proven by a preponderance of the evidence that FCA engaged in unfair acts or practices?

Yes ✓ No       

This is highlight from Exhibit B full verdict form.

Exhibit C1.2: Dr. Bondi

The Court will spend little time on Dr. Biondi's qualifications as they are undisputed. He is an expert in “human factors” and ergonomics, specifically as related to human-machine interfaces, including cars. [ECF No. 95 at 5, 7; ECF No. 85 at 6]. He has a lengthy academic career in this area and has published dozens of peer-reviewed articles. [ECF No. 95 at 7].

<sup>2</sup> An AHR is a headrest that has a spring-activated safety feature that moves the headrest closer to the seat occupant in the event of a rear collision. [ECF No. 83 at 12]; *see also* [ECF No. 99 at 5]. This position helps reduce the likelihood of whiplash injuries. [ECF No. 83 at 12]. The AHR is triggered to deploy when a sensor senses a rear impact, sending a signal to release two “latch pawls” (hooks), which then release a steel striker pin (the pin is mounted in a plastic “sled” with brackets), and the AHR moves forward into the new position. [*Id.*].

community....[his] credentials are impressive, and his knowledge of warnings and their proper design may be helpful to the jury. Therefore, his

8 testimony is admissible.”). \*8

This page 3 & 4 exhibit presents expert testimony deemed acceptable by the Federal Court. Alongside this, Plaintiffs' cross-reference—Exhibit L—demonstrates AHR crash test dummy

imaging that shows normal head and body placement in pre-impact crash test simulations. These simulations elaborate that, in standard command deployment testing, the AHR system is not designed to strike the head (with virtually zero chance of injury), but rather to catch it like a parachute after full deployment.

Even a lay juror can visualize that a space gap remains between the head and the AHR after it is fully deployed—a gap sufficient to avoid contact—despite the fact that the system deploys so rapidly it outpaces the shock wave from a rear-end collision. This exhibit also highlights the absence of warnings in the user guide regarding head proximity—unlike SRS airbags, which caution against body parts being too close, such as resting a leg on the dashboard.

Exhibit C1.3:

Dr. Biondi's report concludes that "the unexpected, unintended deployment of AHR may result in a source of internal distraction for drivers [and] . . . may pose a safety risk." [ECF No. 95-11 at 6 ("Biondi Rpt.")]]. According to his report, the "loud sound and sudden impact [of AHR deployment]" may startle a driver and cause them to visually or manually inspect the vehicle, which could take their attention away from the primary task of driving. [*Id.* at 6-7].

As a preliminary matter, FCA's argument that Dr. Biondi's conclusions amount to nothing more than "theoretical possibilities" that are unhelpful to the

This exhibit highlight from page 3 supports Plaintiff's PTSD claim. Initially unaware of the device's existence at the time of its random deployment—within close proximity to Plaintiff's catapulted head—it was just after dark, obscuring visibility into the back of the vehicle as he entered through the driver's side shortly after his wife had taken the passenger seat. Plaintiff was startled upon being struck by the AHR deployment, with the instantaneous belief that imminent death or unconsciousness was about to occur from a second strike to his head by a hiding assailant in the back of the vehicle. This terror extended not just to himself, but also to his wife, who screamed repeatedly, "What's going on?"

Exhibit C1.4:

6 14]. This \*6 conditional language also is notably absent in Dr. Biondi's rebuttal report. *See* [ECF No. 95-8 (“Biondi Rebuttal”) at 6 (“it is safe to conclude that the loud noise emitted by AHR deployment did in fact startle drivers and cause uncontrollable startling reactions”); 10 (certain customer behaviors in response to unexpected deployment “[are] to be considered a distraction.”)].

Additionally, Dr. Biondi's opinion is based on sufficient data and reliable methodologies. In preparing his opinion, he relied on his “scientific experience evaluating driver-automobile interactions, relevant literature, and his review of hundreds of complaints from consumers who experienced unexpected AHR deployments[.]” [ECF No. 95 at 5]. He also reviewed materials

about the AHR defect specific to this case, deposition testimony, and FCA's videos of AHR deployment, [*id.* at 17], which provided enough information upon which to base an opinion. FCA

This exhibit highlight from page 3-4 of the court opinion supports Plaintiff's traumatic account, which aligns with the startling effect he reported—a fight-or-flight response triggered by the sudden event. Plaintiff initially believed he had been struck with a log glancing off the headrest by someone hiding behind him and his wife. Immediately after finding no one behind him, in an attempt to defend himself and his wife, he feared that both of them had been shot—intensified by her continued screaming—as he then believed the loud noise resembled a gunshot. The expert witness's findings, accepted in a federal court opinion, lend supportive weight to Plaintiff's claims at this stage of litigation.

Exhibit C1.5:

expert, Dr. Biondi, concludes that the unexpected \*16 deployment may lead to unsafe audio and visual driver distractions, *[id. at 13]*; *see also* [Biondi Rpt]. Plaintiffs' also emphasizes that FCA's own owner's manual warns of the risk of injury from unexpected deployments, stating: "To avoid accidental deployment of the [AHR] ensure that all cargo is secured, as loose cargo could contact the [AHR] during sudden stops. Failure to follow this warning could cause personal injury if the [AHR] is deployed." [ECF No. 99 at 12].

This page 8 exhibit speaks to the owners manuals, some of which in Plaintiffs examination are inconsistent with. The plaintiffs users guide adds body parts of hand or a foot to the warning causing and accidental deployment and injury but do not state a head. Plaintiff does not claim his head struck the AHR but it does align with Dr Bondi's statements of probability of what may occur.

## Exhibit C1.6: Dr. Ziejewski

First, FCA argues that Dr. Ziejewski is not qualified to opine on whether the force of unexpected AHR deployment can cause traumatic brain injury because he is an engineer, not a

medical doctor. [ECF No. 87 at 11-13]. While the Court agrees that Dr. Ziejewski cannot opine on a specific medical injury, *i.e.* he cannot opine on whether Soares suffered any injury or whether the AHR caused Soares any injury, he can opine on general causation, *i.e.* the forces involved in AHR deployment and the effects of those forces on any object or the human body. *See Fox v. Omron Healthcare, Inc.*, No. 13-cv-11976, 2016 WL 7826661, at \*4 (D. Mass. Aug. 9, 2016) (holding that general medical causation pertains to whether what is at issue (*e.g.*, a device) is capable of causing injury, whereas specific causation pertains to whether what is at issue was, in fact, “a substantial factor” in causing the injuries suffered). Plaintiffs maintain that Dr. Ziejewski will not opine on specific injury causation. [ECF No. 94 at 10], and his testimony will be so limited.

This exhibit highlight from pages 4–5 of the court opinion addresses the admissibility of expert testimony regarding the capacity of unexpected AHR deployment to cause physical injury, though not to medically diagnose it. The survival of this expert witness’s testimony in a federal court opinion is supportive of Plaintiff’s claims at this stage of litigation.

Exhibit C1.7:

Additionally, the Court finds that Dr. Ziejewski's methodologies are sufficiently reliable for the purposes of *Daubert*. In short, Ziejewski used a mathematical formula for angular acceleration to measure the forces of a deployed AHR. [Ziejewski Rpt. at 7-13]. FCA argues that his opinion is unreliable because it was based on an unreliable formula that he "concocted" to inappropriately measure "angular" or "rotational" acceleration; that he did not use data from crash test dummies or live human subjects; and that the variables he used in his formula contained errors. See [ECF No. 87 at 13-15]. Dr. Ziejewski, however, cites to relevant literature to support the use of the angular acceleration calculation and, based on that, the Court finds the formula sufficiently reliable.

This exhibit highlight from page 5 of the court opinion addresses the admissibility of expert testimony regarding the application of angular or rotational acceleration formulas to AHR random deployments. The survival of this expert testimony in a federal court opinion is supportive of Plaintiff's claims at this stage of litigation.



## Exhibit C1.8: Physical injuries of Costa

was told that she may have suffered a concussion as a result of being struck by the headrest. Since the incident, Ms. Costa has had regular migraine headaches and still has neck pain.

[ECF No. 99 at 8]; *see also* [ECF No. 83 at 11-12]. Costa did not seek medical attention until “days” after the deployment. [ECF No. 83 at 11]. She did not suffer a cervical \*12 fracture, and her medical records indicate that she was “negative for acute pathology.” [ECF No. 83 at 11-12].

This exhibit Costa did not seek medical attention for days and negative for acute pathology. Plaintiff’s wife called 911 to Plaintiffs objections believing plaintiff may have a concussion. Device was inspected and stated it was cushioned and shouldn’t cause a concussion despite not seeing such a device before. The plaintiff told his wife he would go if they said he should, and paramedics said they would transport but don’t give advice on going. Plaintiff followed up earliest emergency appt to chiropractor, who stated he believed he had a concussion and advise going to ER, he would not touch his neck, asked plaintiff why he didn’t go to ER. Plaintiff was diagnosed at ER as post-concussion. Continued medical care with PCP follow-up and referrals behavioral health diagnosis of PTSD, Tbi, Speech Therapy, cervical fusion and ongoing assessments support equitable tolling request of the court.

## Exhibit C1.9: FCA Knowledge of Defect

### *2. FCA's Knowledge of the Defect*

FCA contends that it learned for the first time in April 2016-after Soares purchased his car-of an AHR that had deployed and had a broken sled.

This exhibit from page 7, FCA states to the court it learned for the first time in 2016 of a broken sled.

Exhibit C2.1:

the sleds.” [ECF No. 99 at 9, 16].<sup>6</sup> Plaintiffs’ expert opines that the plastic sled was manufactured from a material that is incompatible with an oil compound used during the manufacture and assembly of the headrests, placing the unit at risk of unintended deployment. [ECF No. 99-32 (Davis Rpt.) at 5, 10]. The expert states that this issue should have been known to FCA when it designed the headrests because of the numerous headrests that failed during the pre-market testing. [ECF No. 99 at 16]; *see also* [Davis Rpt. at 70-71]. Plaintiffs further assert that their “expert and even FCA’s own engineers have testified that had these failures been adequately investigated in 2009, the problems with ESC would have been discovered at that time.” [ECF No. 99 at 9, 16]. Additionally, Plaintiffs contend

This exhibit from page 7 directly counters FCA’s assertion that it first became aware of the problem in 2016. The evidence indicates that **failures involving the headrest design were inadequately investigated as far back as 2009**. According to expert testimony, the use of a plastic sled material incompatible with the oil compound used during assembly led to environmental stress cracking (ESC), placing the headrest at risk of unintended deployment. Furthermore, both Plaintiff’s expert and FCA’s own engineers testified that, had these failures been properly investigated at the time, **the root cause of the defect would have been discovered**—and Plaintiff’s injuries could have been prevented.

Exhibit C2.2:

5 FCA asserts that it only learned of the actual source of the oil by engaging in discovery for another litigation stemming from the same alleged defect. [ECF No. 83 at 14].

This exhibit from page 7 illustrates how little of the public has been informed that the manufacturer not only admitted a defect involving oil contamination that can cause random AHR deployments but also acknowledged knowing the source of that defect. Despite this, the manufacturer has continued to withhold that information without notifying Plaintiff—who had reported his injury to both the NHTSA and various public forums. After doing so, Plaintiff was banned from those forums, further limiting the public's awareness and his ability to share safety concerns.

Exhibit C2.3:

[*Id.* at 13]. FCA and the AHR manufacturer initiated a joint investigation that same year to determine the exact cause of the broken sled. [*Id.*]. The investigation concluded that an out-of-place oil on the striker pin caused environmental stress cracks (“ESC”) in the plastic sled, leading to the failure of the sled and inadvertent deployment. [*Id.* at 14]. By August 2017, though FCA had still not identified the exact source of the oil on the pins, it began to wash the pins with alcohol to eliminate any further \*13 contamination. [ECF No. 83 at 14].<sup>5</sup> FCA alleges that there was no evidence of ESC in or around the striker pin retention brackets during pre-launch testing. [ECF No. 83 at 13].

ESC Oil contaminant. This exhibit from page 7 demonstrates that Plaintiff’s 2017 Jeep Patriot—purchased new on December 31, 2016, from the Larry H. Miller dealership—was subject to a known potential defect, of which FCA had exclusive and superior knowledge. Despite this, neither Plaintiff nor his wife—who had purchased at least four vehicles from the same dealership, were ever notified.

In December 2023, after Plaintiff reported his injuries, an individual identifying themselves as subordinates to a senior FCA attorney called Plaintiff’s wife’s phone, requesting to speak with both Plaintiff and his wife. The caller stated, “Just so you know, we are aware there is a problem, and our engineers are working on it.” The call, however, made no mention of the known oil contamination defect linked to inadvertent AHR deployment.

It remains unclear how FCA obtained the wife’s phone number, as Plaintiff had provided his own contact information. However, the dealership had his wife’s number on file, as all four vehicles had been purchased under her name.

Exhibit C2.4:

According to FCA, the oil was inadvertently introduced during manufacturing, that it does not appear on all AHR pins, and that projected AHR failure rates varied widely among the vehicles depending on the production period. [ECF No. 83]

This exhibit from page 9 highlights failure rate from oil contamination varies widely depending upon production period.

Exhibit C2.5:

117:14-17 (testimony from FCA's head safety investigator that "it was basically the same mechanism that went across all car lines" and "it was happening across all vehicles . . . [a]nd the parts . . . the frame and the basic component is the same across all car lines"); [ECF No. 99-10 at 138:11-14, 280:6-10 (testimony from manufacturer's director of engineering and program management in \*17 North America that "[t]he sled is the same sleds used across these vehicle platforms, so the expectation would be [ESC] could - could occur in any one of these vehicle types[]" and that "pins with that incompatible substance are present in all [FCA] vehicles that had AHR systems . . . until August 2017"); 33:13-15 (the "composition of the striker pins" had not changed at any time"); 145:10-19 (it was "the same coating on all pins from the beginning of production").

This exhibit from page 9 highlights that, according to FCA's own expert witnesses, the AHR system was **essentially uniform across all vehicle lines** until August 2017. FCA's internal testimony confirms that the **sleds and striker pins used in these systems were consistent across platforms**, and that the **oil-based coating on the pins remained unchanged from the beginning of production**. It was only after August 2017 that the manufacturer-initiated mitigation efforts to eliminate the incompatible oil compound linked to environmental stress cracking (ESC) and unintended AHR deployments.

**Notably, this mitigation timeline came after Plaintiff purchased his 2017 Jeep Patriot new on December 31, 2016**, meaning his vehicle was manufactured with the known defective components. This further supports Plaintiff's claim that FCA failed to warn consumers despite possessing internal knowledge of the risk.

Exhibit C2.6:

3. When the sensor within the AHR detects a rear-end impact, the hook releases the striker pin, and the front portion of the headrest deploys, in order to catch the head of the seated person. This deployment **launches the headrest forward at a speed of 67 miles per hour** and with **a force of approximately 120 pounds**. AHR Systems in all of the FCA vehicles relevant to this case contain identical hook-and-pin configurations. They are constructed based on the same design, use contain identical parts—including the sled, striker pins, and springs—and are made with identical materials.

This excerpt from page 2 of the Class Action Complaint highlights the mechanical force and velocity of AHR deployment—**launching the headrest forward at approximately 67 miles per hour, as can be calculated with timestamps to be approx 14ms to full deployment, with a force of approximately 120 pounds**. In publicly available crash test simulations of rear-end collisions, **fully deployed AHRs are shown to reduce the space between the head and the headrest** without making contact. The mechanism is designed to allow **minimal head travel distance under g-force**, enabling the AHR to "catch" the head rather than strike it.

In normal operation, the AHR acts **much like a parachute on a dragster**—absorbing and distributing motion to mitigate injury. These simulations reinforce that under intended conditions, the head is **never impacted by the device itself** but gently supported as part of a controlled deceleration process.



Exhibit C2. 7:

First, Costa has shown that a traditional, or “static,” headrest is a feasible alternative design. [ECF No. 99 at 21]. FCA was outfitting other cars with traditional headrests even during the relevant timeframe, and Costa's proffered expert additionally discusses three alternative design options that could have prevented ESCs from occurring in an AHR. *[Id.]*.

This exhibit from pg 13 is a highlight of the many of plaintiff's thoughts before ever laying eyes upon Costa V FCA. If the AHR were not manufactured as active devices there wouldn't be virtually zero chance of harm as FCA stated regarding the random deployments, there would be Zero and zero claims of inadequate disclosure.

Exhibit C2.8:

that, in 2011, FCA investigated a spike in warranty claims caused by broken sleds and that “[m]any of these 2011 failures were instances where an AHR had failed due to ESC[.]” *[id.]*; *see also [id. at 10 (citing testimony discussing that the manufacturer had received at least two reports of broken sleds in October 2011)]*, and that FCA began receiving reports of injuries resulting from inadvertent deployment as early as 2013, *[id. at 10 (citing testimony of FCA engineer discussing a 2013 complaint where a driver's side headrest \*14 inadvertently deployed while the customer was driving and caused him soreness and whiplash)]*.

This page 7 exhibit references spinal injuries begin being investigated in 2013.

Exhibit C2.9:

Plaintiffs aver that FCA vastly understates the risks associated with inadvertent AHR deployment. In addition to attacking FCA's investigation, Plaintiffs cite the following statistics from the National Highway and Transportation Safety Administration ("NHTSA"):

FCA has received 4,030 Complaints concerning failed headrests . . . ; Of those complaints 439 alleged that the customer sustained an injury (the majority of which occurred in women and children). . . ; 404 individuals were so concerned about the issue that they reported their experiences directly to NHTSA . . . ; There have been 471 lawsuits or legal claims involving alleged headrest failures . . . ; and 7 consumers have reported being involved in an accident as a result of driver distraction following a deployment.

The above exhibit from page 8, containing reports submitted to NHTSA and cited during the *Costa* case, highlights that the **majority of injury reports related to AHR failures involved women and children**. Plaintiff, who had an asymptomatic pre-existing cervical spinal condition,—common among the entire driving population with advancing age,—Plaintiff represents a demographic **not excluded from the general driving population**.

While Plaintiff's basis for equitable tolling is personal in nature, the **compounding effect of trauma on individuals with prior conditions such as** veterans with preexisting PTSD and TBI experiences aligns with the experiences of women, children, elderly, disabled, and veteran populations. As such, **the "eggshell skull" doctrine is applicable**, as Plaintiff's susceptibility to injury due to a latent condition does not diminish the defendant's responsibility for the harm caused.

Exhibit C3.1:

<sup>7</sup> Plaintiffs also have asked the Court to take judicial notice of a new supplemental summary of complaints, obtained from NHTSA's website, that show there have been numerous additional failures reported to NHTSA since November 2021. [ECF Nos. 104, 105]. FCA argues that the request constitutes an improper Rule 56(d)

This page 8 exhibit excerpt from the judicial opinion, wherein the court declined to grant judicial notice of additional post-2021 NHTSA complaints for purposes of FCA's summary judgment challenge. However, the opinion confirms such complaints exist and have continued to accumulate as Plaintiffs injury did not occur until 2023 and thus this exhibit is supportive to granting Plaintiffs equitable tolling motion.

## Exhibit C3.2:

Third, while there is no doubt that an expert opinion is preferred to prove medical causation, *Jackson v. Johnson & Johnson & Janssen Pharms., Inc.*, 330 F.Supp.3d 616, 625 (D. Mass. 2018), the Court will not grant summary judgment against a plaintiff on this basis where the alleged injury (force to the head causing neck pain) is simple enough that a layperson could determine causation without expert assistance, see *Marquez-Marin v. Garland*, No. 16-cv-01706, 2021 WL 3557695 at \*3 (D.P.R. Aug. 11, 2021) (“Expert testimony usually is necessary to establish a causal connection between an injury and its source ‘unless the connection is a kind that would be obvious to laymen, such as a broken leg from being struck by an automobile.’” (citation omitted)); *Pitts v. Wingate At Brighton, Inc.*, 972 N.E.2d 74, 79 (Mass. App. Ct. 2012) (“No expert testimony is necessary for lay jurors to appreciate that allowing a nursing home patient to fall to the floor could cause a broken bone.”). Cf. *Pritchard v. Stanley Access Techs., LLC*, No. 08-cv-11762, 2011 WL 309662, at \*5 (D. Mass. Jan. 27, 2011) (expert medical testimony required because of

This exhibit from page 13 addresses the court’s view that while expert testimony is preferred to prove medical causation, it is not always required when the causal connection is obvious to a layperson. In *Costa*, the court denied FCA’s summary judgment even where the claimed injuries were less severe than the several asserted by Plaintiff, holding that causation could reasonably be determined by a jury without expert assistance.

Here, Plaintiff’s delay in obtaining a timely and costly neurologist evaluation following treatments for his diagnoses Cognitive Speech Deficit—due to insurance limitations and administrative barriers—does not undermine the legitimacy of his injury. His condition progressed through documented treatment until it was ultimately diagnosed as a traumatic brain injury (TBI) after 90 days of symptoms. Unlike in *Costa*, Plaintiff’s concussion advanced to formal classification as a TBI, and complicated with his diagnosis of PTSD symptoms which aligns with established medical literature recognizing concussion as a form of TBI and PTSD effecting each recovery. While the degree of injury may be subject to juror interpretation, the mechanism itself—**angled head acceleration in reverse from shutting the driver’s door, immediately followed by an unexpected AHR deployment at close**

**proximity**—combined with the startling effect is a scenario well within a layperson’s understanding.

Plaintiff’s exhibits, including crash test dummy time-stamped simulations, demonstrate that the AHR deployed nearly **three times faster than side-by-side airbag systems** in order to beat the shock wave of a rear-end impact. When viewed alongside force calculations cited in *Costa* (nearly **120 pounds of force**), the visualized mechanics of the AHR, and a layperson’s intuitive grasp of **how sudden, high-speed deployment in close quarters can amplify trauma**, the plausibility of Plaintiff’s injury becomes both visible and compelling.

In this case, Plaintiff’s head was already in reverse motion—such as from shutting his driver’s door—when his head moved into slight leftward angled proximity with the AHR, which deployed without warning. Rather than a static recoil injury, the interaction is more accurately likened to a **“pinball effect,”** where the AHR, acting like a flipper, launches the unsuspecting approaching target with force. Under this model, the causation mechanism is fully appreciable to lay jurors, eliminating the necessity for expert medical testimony at this stage.

Exhibit C3.3:

*4. Vehicles Potentially Affected*

This AHR system was installed in over 8 million vehicles. [ECF No. 83 at 15; ECF No. 99 at 13]. 116,080 of those vehicles were sold or leased in Massachusetts. [*Id.*]. FCA asserts only “a tiny percentage of those vehicles might be affected[,] [ECF No. 83 at 15-16], while Plaintiffs assert that FCA’s internal documents and testimony from its supplier support that “all class vehicles may experience the defect,” [ECF No. 99 at 14].

This exhibit from page 9 establishes that, as of the *Costa v. FCA* case, the AHR system had been installed in **over 8 million vehicles**, with FCA’s own internal documents and supplier testimony confirming that “**all class vehicles may experience the defect.**” Plaintiffs in *Costa* cited this to challenge FCA’s claim that only a small percentage of units were affected.

This broad scope directly impacts Plaintiff’s current experience. His vehicle’s **passenger-side AHR remains non-deployed**, yet is of the same design as the defective units. FCA’s admission that **all class vehicles are potentially affected** reinforces the plausibility that the non-deployed unit still poses a threat. This ongoing exposure has triggered **repeated PTSD flare-ups** for Plaintiff—particularly when being driven to medical appointments by his wife, with the passenger AHR **visibly restrained with paracord** out of fear it might deploy.

This detail highlights not only the **continued psychological trauma**, but also the **reasonable apprehension** caused by known defects, which remain **unresolved and unremediated** in Plaintiff’s vehicle.