

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF KENTUCKY  
LOUISVILLE DIVISION  
CASE NO. 3:07-CV-638-DJH-CHL

**ELECTRONICALLY FILED**

LARRY DALE CROUCH, RHONDA MAE CROUCH,  
TEDDY LEE HUDSON AND CAROLYN SUE HUDSON PLAINTIFFS

AND

KENTUCKY ASSOCIATED GENERAL  
CONTRACTORS SELF-INSURANCE FUND  
AND BRIDGEFIELD CASUALTY INS. CO. INTERVENOR PLAINTIFFS

v. **PLAINTIFFS' TRIAL BRIEF**

JOHN JEWELL AIRCRAFT, INC. DEFENDANT

\* \* \* \* \*

COME the Plaintiffs, by counsel, and pursuant to the Court's most recent scheduling order [D.E. 524], hereby submit their trial brief.

This is a long-standing, complex case, arising from a general aviation airplane crash that occurred in Bardstown, Kentucky, on November 21, 2006. [D.E. 1 at 7.] The Plaintiffs are Larry Crouch, the pilot of the plane, and his wife, Rhonda Crouch, and Teddy Hudson, the passenger, and his wife, Carolyn Hudson. *Id.* at 3. The Defendant is John Jewell Aircraft, Inc., the overhaul shop where the engine of Larry Crouch's airplane was overhauled and where a single shaft dual magneto was installed in April 2005, a little more than a year before the crash. [D.E. 386-3 ¶ 16.]

**I. Undisputed Facts**

It is undisputed that the plane Larry Crouch was operating, with Teddy Hudson as his passenger, crashed on November 21, 2006, approximately 19 months after John Jewell Aircraft, Inc., overhauled its engine. The crash occurred due to lack of engine power. The parties disagree

over what caused the lack of engine power, but it is undisputed that Larry Crouch was unable to restart the plane's engine once the engine stopped producing power and he was descending toward the Nelson County Airport in Bardstown, which he did not reach.

It is undisputed what *did not* happen. The parties agree that there was no in-flight fire; the only fire occurred after the aircraft hit the ground. (The in-flight smoke reported by Teddy Hudson was a result of engine oil escaping – the source of the escape is in dispute – and burning on a hot surface, perhaps the exhaust system, or perhaps the cabin heater.)

Plaintiffs contend that the loss of power occurred when the magneto, which was installed by John Jewell during the overhaul, separated during flight as a result of fatigue fractures. John Jewell contends that the magneto broke only upon impact with the ground. However, the parties agree that the magneto flanges (the attachment points that broke) had significant fatigue fractures through more than 70 percent of both the upper and lower flange, which was caused by vibration, also called “cyclic stressing.” Those fatigue fractures either caused the magneto to fail in-flight, or would have failed in the near future if they did not fail on the day of the crash.

There is no dispute that John Jewell performed various repairs on the aircraft's engine during the overhaul in March-April 2005. It is undisputed that John Jewell Aircraft, Inc., was a Certified Repair Station as designated by the FAA. There is no dispute that John Jewell Aircraft, Inc., certified the engine and aircraft as airworthy upon the completion of the overhaul (as certified by the signature of John Jewell himself), asserting that the repairs included in the overhaul were properly done and that the aircraft was safe to fly. That certification is required by the FAA before the aircraft can be returned to service, and it must be made by a certified repair station. John Jewell was responsible for doing so in this case. Before Jewell completed the overhaul, he accepted the crankcase, which he had sent off for repairs. However, rather than

ensuring that the crankcase fit together properly and returning it to the firm that serviced the crankcase when it did not, Jewell further modified the crankcase so that it would fit together in the manner that Jewell reassembled it, thus altering the crankcase from the state in which it was returned to him by Crankcase Services.

The parties agree that John Jewell installed a new-to-this-aircraft, rebuilt magneto during the overhaul. The gasket used by John Jewell and also by George Durham, when the magneto was reinstalled, was a model made by Superior Air Parts that was FAA-approved but was a different thickness and had a different compressibility than the actual gasket specified by the engine manufacturer; it was chosen due to its lower cost. Also, when John Jewell reassembled the engine, it used the same attaching clamps to mount the magneto on the engine that he removed from the engine before the overhaul. (George Durham later removed and reinstalled the same clamps during subsequent routine maintenance.) But these were first generation clamps that had been twice superseded by newer-design clamps. The parties agree that the combination of the Superior Air Parts gasket and the superseded clamps caused Type-1 loading, and increased stress, on the magneto flange. This contributed to the development of fatigue fractures in the flange.

The parties also agree that certain portions of John Jewell's overhaul deviated from specification, although they disagree on the affect of these deviations. For instance, the parties agree that John Jewell installed the wrong part number roller pin, using one that was heavier than specified. John Jewell also does not dispute that it enlarged the dowel holes, machined the crankcase halves to fit them together, manually enlarged two gear shaft bosses, and modified the drive gear teeth.

Finally, it is undisputed that the Plaintiff's injuries, multiple surgeries, and recuperation were a result of the crash. It is also undisputed that, due to the crash, Larry Crouch and Teddy Hudson are now paraplegics.

## **II. Disputed Facts**

A number of other facts remain in dispute. John Jewell contends that the engine did not fail in mid-flight, but that Larry Crouch intentionally shut down the engine when he or Teddy saw or smelled smoke, and that Larry could not restart the engine for undetermined reasons. (Jewell makes this contention even though it is unlikely that a pilot who thought the engine was on fire would switch fuel tanks, turn on the auxiliary fuel boost pump, and attempt to restart the engine under those circumstances.) Jewell acknowledged that the magneto flange had significant fatigue cracks, but contends that the magneto remained in place throughout the flight and broke upon impact with the ground. (Jewell's experts concede that the magneto would have separated due to fatigue fractures in the foreseeable future if the plane had not – fortuitously for Jewell – crashed when it did.)

Plaintiffs contend that John Jewell made various improper modifications to the engine during its reassembly, and those modifications increased engine vibrations. Plaintiffs also allege that John Jewell improperly attached the magneto to the engine's accessory case during the overhaul, in a way that made the magneto more susceptible to fatigue fractures. The combination of increased vibrations and improper attachment led to rapid development of the fractures that caused the magneto to fail in flight on November 21, 2006. Even though the magneto was apparently removed by George Durham during the 100-hour inspection, just 38 operating hours before the crash, Mr. Durham reinstalled the magneto using the same component parts and the

same methods as John Jewell had used. Thus, the vast majority of the damage most likely would have been done before Durham removed and reinstalled the magneto.

Specifically, Plaintiffs experts have the following opinions relating to John Jewell's failures:

- Use of an authorized yet defectively designed gasket in combination with clamps which were not recommended for this type magneto, aggravated the weakness of the magneto design.
- The clamp and gasket used on the subject engine to attach the single shaft magneto to the engine accessory case were such that they caused excessive stress on the magneto flange making it highly likely that the fatigue cracks would occur at the flange causing the flange to crack and the magneto to break off the engine.
- The subject magneto separated from the engine due to fatigue fractures in the flange of the magneto housing. The fatigue fractures were initiated due to higher than normal stress levels in the magneto flange. The increase in the stress level was a result of a magneto gasket of the improper thickness, pre-1985 narrower attaching clamps and increased vibrations in the engine.
- The design of the magneto assembly is very sensitive to the combined thickness dimension of the magneto gasket and magneto flange. If the combined thickness is too small, the clamp can make contact with the accessory housing before it develops the necessary force on the magneto flange to prevent rotation of the magneto. If the combined thickness is too large, the clamp will make contact with the outer perimeter of the magneto flange (Type I load). This directly results in a large increase in bending stress of the magneto flange. This increase in stress greatly reduces the fatigue life of the magneto housing and makes it more likely the magneto flange will fracture and separate from the engine.
- The initiation and propagation of fatigue cracks in the magneto housing were the result of the combination of the applied clamping stress at the flange and the alternating stresses imposed on the magneto assembly by vibrations from the operating engine. In the case of the subject engine, modifications and improper assembly during the engine overhaul by John Jewell Aircraft led to increased vibrations beyond that of the normal engine operations and were significant factors in the premature failure of the magneto. The use of the older style clamps was a significant factor in initiating fatigue fractures and failure of the magneto housing.
- John Jewel modified two alignment pin holes on the accessory case. This unapproved procedure alone would alter the alignment and provide for a clearance change of .047" to the gear spacing backlash.

- The crankcase halves were not in proper alignment because of being improperly machined. This should have been immediately apparent to an experienced engine assembler once it was determined that the accessory case would not fit properly onto the crankcase assembly.
- The accessory case at both idler gear support bosses also showed evidence of being manually enlarged also to facilitate the installation of the accessory case housing onto the crankcase. This also would have been accomplished during the engine assembly process to facilitate the installation of the accessory housing onto the crankcase assembly to overcome the improper fit between the gears.
- Two of the four crankshaft counterweight pins was the wrong part number as specified by Lycoming. These wrong pins are of a slightly different diameter than the correct pins. The counterweight pins, or “rollers” are used to attach the pendulum counterweights onto the crankshaft itself. The size and weight of the counterweight pins directly affect the counterweights ability to properly dampen crankshaft torsional vibrations which would accelerate the vibrational fatigue to the crankshaft and all attaching engine accessories, specifically the magneto flange attachment.
- The accessory drive gears showed evidence of being excessively altered on the drive face of the gears themselves by what appears to be a sanding, wire wheel or other metal removal method to remove surface wear.
- The combination of the un-authorized procedures utilized to force an ill fitting accessory case onto the improperly machined crankcase assembly caused excessive and accelerated wear on the gear teeth and have significantly contributed to excessive engine vibration due to improper gear teeth backlash clearances, unstable gear support, and improper gear teeth engagement geometry. These substantial factors induced the vibration fatigue into the engine and externally mounted components, particularly the magneto flange.
- All of the modifications above either shortened the fatigue life of the magneto flange, or increased engine vibrations, which together caused the magneto to fail in flight.

### **III. Essential Elements of Plaintiffs’ Claims**

This is a negligence claim. Under Kentucky law, Plaintiffs must prove (1) that John Jewell had a duty to Plaintiffs, (2) that John Jewell failed to exercise ordinary care when it undertook the overhaul of Larry Crouch’s plane, (3) that John Jewell’s failure to exercise ordinary care was a substantial factor in causing the plane crash, and (4) that the Plaintiffs were

damaged by John Jewell's actions. Pathways, Inc. v. Hammons, 113 S.W.3d 85, 88-89, 91-92 (Ky. 2003).

The substantial factor test means that an action need not be the only cause, or the greatest cause, or the "probable" cause of an injury for the tortfeasor to be Defendant liable. Under Kentucky law, "[t]he word 'substantial' is used to denote the fact that the defendant's conduct has such an effect in producing the harm as to lead reasonable men to regard it as a cause, using that word in the popular sense, in which there always lurks the idea of responsibility." Pathways, Inc., 113 S.W.3d at 92. Put another way:

The breach of the required standard of care by an actor can produce a result similar to that of a snowball rolling down a hill. The initial consequence of the snowball may be slight. But as the snowball rolls down the hill its increasing size and momentum take on a character of their own which can cause injury of a magnitude far beyond the imagination of the one who set the snowball in motion. Nevertheless, the law is that between the negligent actor and the injured innocent, the innocent should recover compensation...

Deutsch v. Shein, 597 S.W.2d 141, 143 (Ky. 1980).

There is no dispute that John Jewell had a duty to the Plaintiffs to exercise ordinary care when it undertook to overhaul the engine in exchange for payment from Larry Crouch. While there may be some dispute about the specific extent of Plaintiffs' damages, it is not in dispute that their injuries were caused by the crash. Thus, the disputed elements are whether John Jewell failed to exercise ordinary care and whether that failure was a substantial factor in causing the crash.

#### **IV. Anticipated evidentiary and legal issues**

**1. Whether there is issue preclusion due to the jury verdict Alabama trial.** The fundamental requirement of issue preclusion, that the issue was "actually litigated and resolved in a valid court determination" is not present in this case. Taylor v. Sturgell, 553 U.S. 880, 892,

128 S.Ct. 2161, 2171, 171 L. Ed. 2d 155 (2008). That is because the jury in Alabama did not make a specific finding as to whether the magneto was defective.

**2. Whether John Jewell is entitled to an apportionment instruction against non-settling former Defendants.** Under Kentucky law, apportionment is only available against parties to the action and non-parties who have been granted a release from liability or covenant not to sue. KRS 411.182(1) and (4). No previous or potential party to this case has been granted any release or covenant not to sue. There is no apportionment when a party is dismissed for another reason, such as a judgment on the merits or dismissal due to sovereign immunity. Lexington-Fayette Urban County Government v. Smolic, 142 S.W.3d 128 (Ky. 2004). Furthermore, when a case is divided between two venues due to the courts' jurisdiction over the defendants, there is no apportionment between the parties in different venues. Copass v. Monroe County Medical Found., Inc., 900 S.W.2d 617 (Ky. App. 1995). Thus, it follows that there should be no apportionment to any non-party in this case, whether that party was transferred to another court (TCM), voluntarily dismissed (e.g. Honeywell, Kosala), or dismissed by Order of the Court due to a statute of repose that, in the Court's interpretation, cut off Plaintiffs' claims before the crash even occurred. (Avco-Lycoming).

**3. Admissibility of Bernie Coogan's prior testimony and report.** Bernie Coogan has been identified as an expert for Plaintiffs. Mr. Coogan was also a fact witness, as he was on the scene of the crash within days and observed the wreckage of the plane before it was transported away. Unfortunately, Mr. Coogan died in November 2015, just a few weeks before the trial was set to begin. This Court has issued a ruling on Defendant's Daubert relating to Mr. Coogan, holding that Mr. Coogan's testimony relating to engine vibrations cannot be admitted at trial. However, Mr. Coogan's observations and opinions about other matters at the scene of the



accident were recorded in his expert report and in a deposition taken by John Jewell's attorneys. Mr. Coogan's observations as a fact witness, and any other testimony not covered by the Court's ruling on Defendant's Daubert motion, should be admitted into evidence at trial.

**4. Plaintiffs incorporate by reference their pending motions.**

- a. Motion to reconsider exclusion of Jack Sink's testimony [DE 538].

**V. Damages**

Plaintiffs have incurred substantial damages in this case, for personal injury (including past and future medical expenses and pain and suffering) and loss of consortium. Those items of damages are itemized as follows:

**Larry Crouch**

Past Medicals	\$691,128.50
Future Medicals	\$1,788,654.00
Past Pain & Suffering	\$3,500,000.00
Future Pain & Suffering	<u>\$3,500,000.00</u>
<b>Total</b>	<b>\$9,479,782.50</b>

**Rhonda Crouch**

Loss of services, aid, society, companionship and conjugal relationship of her Spouse, Larry Crouch	<u>\$2,500,000.00</u>
<b>Total</b>	<b>\$2,500,000.00</b>

**Teddy Lee Hudson**

Past Medicals	\$1,381,614.24
Future Medicals	\$1,862,014.00
Past Pain & Suffering	\$3,500,000.00
Future Pain & Suffering	<u>\$3,500,000.00</u>
<b>Total</b>	<b>\$10,243,628.24</b>

**Carolyn Hudson**

Loss of services, aid, society, companionship and conjugal relationship of her Spouse, Larry Crouch	<u>\$2,500,000.00</u>
<b>Total</b>	<b>\$2,500,000.00</b>

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on March 14, 2015, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will send notification of such filing to the following:

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