

United States 5th Circuit Court of Appeals Reports

MOORHEAD v. MITSUBISHI AIRCRAFT INTERN., INC., 828 F.2d 278 (5th Cir. 1987)

RUTH HENDERSON MOORHEAD, ET AL., PLAINTIFFS-APPELLANTS, v. MITSUBISHI
AIRCRAFT INTERNATIONAL, INC., ET AL., DEFENDANTS, UNITED STATES OF AMERICA,
DEFENDANT-APPELLEE.

LINDA M. HUTCHINSON, ET AL., PLAINTIFFS-APPELLANTS, v. UNITED STATES OF
AMERICA, DEFENDANT-APPELLEE.

ROSE MARIE BAKER McNEILL, ET AL., PLAINTIFFS-APPELLANTS, v. MITSUBISHI
AIRCRAFT INTERNATIONAL, INC., ET AL., DEFENDANTS, UNITED STATES OF AMERICA,
DEFENDANT-APPELLEE.

No. 86-2625.

United States Court of Appeals, Fifth Circuit.

September 29, 1987.

Rehearings Denied November 2, 1987.

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L.W. Anderson, Dallas, Tex., Larry P. Boyd, Houston, Tex., for
Rose Marie Baker McNeill, et al.

Tom H. Davis, Austin, Tex., for Hutchinson plaintiffs.

Scott Baldwin, Marshall, Tex., for Ruth Henderson Moorhead, et
al.

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Jan Von Flatern, Torts Branch, Civ. Div., J. Paul McGarth,
William J. Cornelius, Jr., Washington, D.C., for U.S.

Appeals from the United States District Court for the Eastern
District of Texas.

Before WISDOM, WILLIAMS, and HILL, Circuit Judges.

WISDOM, Circuit Judge:

[1] On September 2, 1981, a Mitsubishi MU2B-25 airplane piloted by
Raymond D. Baker accumulated ice and crashed near McLeod,
Texas.[\[fn1\]](#) The crash killed all five occupants of the
plane.[\[fn2\]](#)

[2] About nine hours before departure, the National Weather Service issued an areawide forecast for Oklahoma, New Mexico, Texas, and coastal waters.[\[fn3\]](#) This included, among numerous other things, a forecast of moderate mixed icing[\[fn4\]](#) in clouds and precipitation above the freezing level. It also forecast the freezing level as 14,000 to 14,500 feet above sea level in the northern part of the area, rising to 15,800 feet in southern Texas.

[3] About two hours before departure, Baker telephoned the Federal Aviation Administration's Dallas Flight Service Station for a weather briefing for his flight.[\[fn5\]](#) Baker told the weather briefer he was going to Augusta, Georgia, over Texarkana, Greenwood (Mississippi), Birmingham, and Atlanta and would probably be flying at 21,000 feet above sea level. The briefer drew on a number of sources of information, including the area forecast, in briefing Baker. Relevant to the Texas portion of the flight, the briefer told Baker that Gregg County, Texas (about 40 miles southwest of the crash site) was reporting "two tenths coverage of thundershowers", that Texarkana (about 25 miles north of the crash site) was reporting "rainshowers of unknown intensity", that "there's a lot of precip[itation]

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throughout the whole area", that Baker should not "be surprised to look out [his] right window and see a mess of stuff", but that at 21,000 feet Baker would "probably be on top of most everything except the cirrus clouds". The briefer did not tell Baker of the moderate mixed icing forecast, nor did he tell Baker the freezing level.

[4] The plane was cleared for takeoff at 4:13 p.m. Its departure and climbout were normal and, at 4:23 p.m., Baker was cleared to climb and maintain 21,000 feet. National Transportation Safety Board data show that after leveling off at about 21,000 feet at 4:41 p.m., the plane gradually increased velocity to about 198 knots at 4:46 p.m.[\[fn6\]](#)

[5] Around this time, the plane entered moderate icing and began to accumulate ice on its wings and tail.[\[fn7\]](#) After 4:46 p.m. the accumulating ice caused the plane to begin to lose velocity, slowing to about 155 knots at 4:50 p.m., when Baker requested authority to climb to 23,000 feet.[\[fn8\]](#) Just past 4:51 p.m., the plane reached its greatest height, about 21,400 feet, and its slowest speed since takeoff, about 125 knots. At this point the plane began to descend, losing at least 3000 feet in altitude in the next minute. By 4:52 p.m., when F.A.A. radar lost contact with the plane, the plane had stalled and entered a spin. It struck the ground in a wooded area and was destroyed by the force of the impact and the post-crash fire.

[6] The families of those killed filed these consolidated actions, seeking damages under Texas Wrongful Death Act, the Texas Survival Statute, and the Federal Tort Claims Act.[\[fn9\]](#) After a bench trial, the district court, in a carefully considered opinion, ruled that the United States' weather briefing was neither negligent nor a proximate cause of the crash, that

Mitsubishi's defective design of the plane's airspeed indicator was 40 percent responsible for the crash, and that Baker's negligent piloting during the icing of the plane was 60 percent responsible, [639 F. Supp. 385](#). Accordingly, Baker's family received nothing and the passenger families won a judgment for over \$5 million against Baker's estate.[\[fn10\]](#)

[7] The record contains little direct evidence regarding the crucial last minutes of the flight. Everyone on board died instantly and most of the plane, including its flight recorder, was destroyed. Radio communication during the flight was sparse and largely routine. Most of the evidence at trial consisted of expert testimony by meteorologists, accident reconstruction specialists, and professional pilots who interpreted the weather and flight data.

[8] Baker's estate challenges the findings of pilot negligence and the admission into evidence of Baker's pilot training records. The passengers' families challenge three of the district court's damages rulings: the finding that there is insufficient evidence
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to justify an award of damages for the crash victims' conscious pain and suffering, the ruling that the plaintiffs are not entitled to damages for their mental anguish without proof of physical manifestation, and the court's refusal to find damages for their loss of inheritance. All the plaintiffs challenge the lower court's verdict for the United States. All the plaintiffs also argue that Mitsubishi should *not* be liable.

[9] We reverse one of the district court's three findings of pilot negligence and, because of an intervening change in law, reverse its ruling on damages for mental anguish. We affirm the district court on all the other grounds and remand for a determination of damages for the plaintiffs' mental anguish and a reallocation of the judgment between the estate of Raymond Baker and Mitsubishi.

I.

[10] There is no dispute as to the fundamental legal issues regarding liability. The Texas law of negligence requires that to show liability plaintiffs must prove (1) duty, (2) breach of duty, (3) harm, and (4) proximate cause.[\[fn11\]](#) Proximate cause consists of "cause in fact" and foreseeability.[\[fn12\]](#) FAA weather briefers have the duty of due care in giving information about hazardous weather conditions that might influence pilots to alter their proposed flight plans.[\[fn13\]](#) This duty extends also to the passengers.[\[fn14\]](#)

[11] The appellants argue that the weather briefer is required, as a matter of law, to tell pilots of any area forecast of "moderate mixed icing" that covers their flight plan. We disagree. Weather briefers rely on many weather data sources other than area forecasts.[\[fn15\]](#) They must, in a short time, communicate to the pilot a great deal of standard meteorological and aeronautical information as well as a number of possibly hazardous conditions concerning the entire route of flight.[\[fn16\]](#) Briefers are told specifically to emphasize reports of temperature inversions; low

level wind shear, thunderstorms, or frontal zones within 50 nautical miles of the departure or arrival terminals; they are not, however, told specifically to emphasize icing conditions.[\[fn17\]](#) Briefers are instructed not to read weather reports and forecasts verbatim, unless it is specifically requested by the pilot.[\[fn18\]](#) Although briefers are not themselves to issue weather forecasts,[\[fn19\]](#) they must nonetheless exercise discretion in choosing the information on weather to pass along to pilots.

[12] Thus, the district court's fact finding that this particular briefing complied with the standard of due care must stand unless clearly erroneous. This standard of review, set out in Fed.R.Civ.Pro. [52\(a\)](#), is a demanding one. In the often-cited case of *United States v. United States Gypsum Co.*, the Supreme Court made it clear that to set aside a district court's finding of fact, a court of appeals must be "left with the definite and firm conviction that a mistake has been committed".[\[fn20\]](#) In *White v. Page* 283

Arco/Polymers, Inc., this court explained that

clear error exists where (1) the findings are without substantial evidence to support them, (2) the court misapprehended the effect of the evidence, and (3) if, although there is evidence which if credible would be substantial, the force and effect of the testimony, considered as a whole, convinces the Court that the findings are so against the great preponderance of the credible testimony that they do not reflect or represent the truth and right of the case.[\[fn21\]](#)

[13] After reviewing all the evidence on the question of government negligence, we are not convinced that the district court's findings are erroneous – clearly or otherwise. The evidence suggests that the briefer rightly gave other information a higher priority than the icing forecast. The briefer informed Baker of the possibility of thundershowers and other precipitation in the crash area. The evidence establishes that thundershowers pose a far greater hazard for small aircraft than moderate mixed icing. The evidence is also that the briefer was reasonable in discounting the importance of the icing forecast: the area forecast was about seven hours old at the time of the briefing, covered a huge area, and had not been verified by any pilot reports of icing in the area of Baker's flight.

[14] Further, the possibility of precipitation, particularly thundershowers, above the freezing level should have informed a reasonable pilot that he might encounter icing on this flight – including moderate mixed icing or icing of even greater potential hazard.[\[fn22\]](#) Weather briefers are not required to tell pilots what they should already know.[\[fn23\]](#) There is little doubt that knowing of the icing forecast would have heightened Baker's awareness of the potential for this particular hazard. Viewing the evidence as a whole, we cannot characterize as "clearly erroneous" the court's conclusion that the briefer was not negligent in choosing to omit the forecast in these

circumstances, and that the United States did not breach any duty to Baker or his passengers.

[15] We note, however, our agreement with the district court's finding that, even if there had been a breach of duty to warn of possible icing, this was not a proximate cause of the crash. The evidence that Baker would have altered his flight significantly had he known of the icing forecast is speculative and contradicted by other evidence.[\[fn24\]](#) In addition, the record contains no evidence to support a finding that a crash was a "natural and probable consequence" of the omission of the forecast – or even that a crash was a foreseeable consequence of the icing that occurred.[\[fn25\]](#) Finally, any causal nexus is weakened to the extent that there was intervening negligence on the part of Mitsubishi and Baker.[\[fn26\]](#)

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II.

[16] We also affirm the district court's finding that Mitsubishi's defective manufacture of the plane's airspeed indicator was in part responsible for this crash. Mitsubishi employs the "Pitot" system to calculate airspeed. This system compares the pressure of the atmosphere outside the plane ("ambient" air pressure) with the pressure of the air as it flows over the plane ("ram" air pressure). Ambient air pressure is measured at one place on the plane and ram air pressure at another. The court found that moisture froze in the tube used to measure ram air pressure, trapped the pressure, and caused indicated airspeed to increase with altitude rather than reflect true airspeed. As a result, the court concluded, Baker's airspeed readings increased as the plane climbed and gave him no indication that the accumulating ice was slowing his plane.

[17] The testimony of the government's witness, Mr. Bernard Coogan, which the court specifically credited on this point, is clear and persuasive. Coogan testified that Mitsubishi's Pitot system had previously malfunctioned in just such a way in circumstances similar to Baker's flight, that several warnings of these malfunctions had been issued to Mitsubishi pilots and owners suggesting that the system be modified to correct the problem,[\[fn27\]](#) and that his study of the wreckage and Brigadier's service records persuaded him that the plane was using the unmodified Pitot system. The testimony of Coogan and other witnesses amply supports the finding that Baker would not have attempted his final, ill-fated climb had he not been receiving erroneously high airspeed readings.

[18] The plaintiffs contend that the district court's explanation of the technical aspects of the Pitot system malfunction should have led to a conclusion that the malfunction produced an airspeed of zero rather than an erroneously high reading.[\[fn28\]](#) We see no confusion sufficient to conclude that the court substantially misapprehended the effects of Coogan's testimony or the other evidence.

[19] The district court did *not* find that the airspeed indicator

malfunction produced an erroneous zero reading. Rather, the court stated that the Pitot system malfunctioned so that the indicated airspeed erroneously varied with altitude. Further, the district court specifically credited Coogan's testimony to support this finding. Coogan testified that although Pitot malfunctions producing erroneous zero airspeed readings are more common than those producing erroneously high airspeed readings, there are documented cases of reasonable, yet detrimental pilot reliance on erroneously high readings.[\[fn29\]](#) The verdict against Mitsubishi must stand.
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III.

[20] We now turn to the findings of pilot negligence. As with the question of government negligence, the parties do not dispute the district court's statement of the pilot's legal duty to the passengers. Pilots are directly responsible for the safety of their passengers and are the final authority for the operation of their planes.[\[fn30\]](#) As the Ninth Circuit stated in *Spaulding v. United States*:

The pilot has a continuing duty to be aware of danger when he can gather adequate information with his own eyes and instruments. . . . A pilot cannot disregard the weather conditions he sees around him.[\[fn31\]](#)

[21] The district court found Baker negligent in three respects:

(1) Baker should not have entered the cloud responsible for his icing encounter; (2) once in it, he waited too long before trying to get out of it; and (3) he mismanaged the flight controls after the plane stalled, and this mismanagement caused a spin from which the plane never recovered.

[22] Bearing in mind that the "clearly erroneous" standard is a demanding one, we reverse the first of the district court's three pilot negligence findings. We affirm the others.

A.

[23] The finding that Baker's decision to enter the cloud responsible for his plane's icing is "without substantial evidence" to support it.[\[fn32\]](#) The evidence in the record is to the contrary. Witnesses testified that icing encounters of the severity Baker could have expected are rarely hazardous and are handled routinely by descent to below the freezing level. The record contains no suggestion that the type and severity of icing that Baker should have expected – or that he actually encountered – is to be avoided at all costs.

[24] It is not *per se* unreasonable for a pilot such as Baker, who was "instrument certified" and flying an aircraft with adequate de-icing equipment, knowingly to risk an encounter with moderate mixed icing. The district court cites *Black*, [441 F.2d 741](#), and *Peters v. United States*, [596 F. Supp. 889](#) (E.D.Pa. 1984), in

support of the contrary proposition, but these cases are inapposite. *Black* and *Peters* concern Visual Flight Rule ("VFR") certified pilots who chose to fly into clouds in direct violation of the statutory limits on VFR certified pilots.[\[fn33\]](#) Baker, however, was an Instrument Flight Rule ("IFR") certified pilot. IFR certification allows pilots to enter clouds; the reason for IFR certification is to ensure that the pilots certified have the skills necessary to fly in cloud and other conditions where visual navigation and hazard detection is impossible. IFR certified pilots cannot be expected to avoid any risk of an icing encounter by dodging all clouds and visible precipitation above the freezing level.

B.

[25] The district court's second finding of pilot negligence is that Baker knew or should have known the amount of ice accumulating on his plane and failed to respond prudently. The court concluded that Baker encountered moderate mixed icing on the plane's wings and tail, and could see ice accumulating on the wings. The court assumed that Baker used his de-icing equipment, which would keep the plane's wings sufficiently free of ice to allow Baker to avoid the icing area.

[26] The plaintiffs presented evidence that Baker unexpectedly entered an area of icing so severe it exceeded the capabilities of a reasonably prudent pilot to manage. They argue here that, in the light of this

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evidence, the court's second finding of pilot negligence is clearly erroneous. We disagree.

[27] The object of diversion is not only to get out of icing conditions, but to accommodate the flight to the weight of any ice accumulated on the aircraft. Several witnesses testified that, because aircraft can accommodate greater weight at lower altitudes, descent is usually the proper response to ice accumulation. Professional pilots testified that, by descending as soon as they noticed icing, they and most other pilots had managed safely the amount of ice Baker accumulated.[\[fn34\]](#) Baker, however, waited at least five minutes before responding and then chose to climb rather than descend. That, at 21,000 feet, Baker was near the MU-2's 25,000 feet maximum service level makes his decision to climb the ice-laden aircraft appear all the more imprudent. Considered together, this is ample evidence to support the district court's finding that Baker was negligent both in delaying five minutes before making any attempt to divert and in choosing to climb rather than descend to escape the ice.

C.

[28] The district court's third finding of pilot negligence, that Baker mismanaged the stall that ensued when he attempted to climb his ice-laden plane, is also sufficiently supported by evidence. Although the court found that the climb and stall were in part caused by Baker's reliance on the erroneously high airspeed indications, it also found that the ultimate cause of the plane's

uncontrolled descent was a spin Baker induced by mismanaging the plane's controls. In addition, the court found that Baker, who was short in stature, was unable to depress the rudder pedal as fully as is necessary to prevent or to control a spin in this aircraft.

[29] The court again specifically credits the government's witness, Bernard Coogan, in these findings. Coogan testified that the spin had to be induced by pilot input; Richard Kemper, a witness for Mitsubishi, agreed. Jerry Drennan, Baker's own witness and one of his flight instructors, testified that he had advised Baker to place the pilot's seat in its full forward position and use a cushion because Baker had trouble fully depressing the rudder. Coogan testified that the pilot's seat, recovered from the wreckage, was locked "several inches" back from the full forward position.[\[fn35\]](#)

[30] Baker's estate argues on appeal that it is clear error to find Baker's management of the stall negligent on the basis of the position of a pilot's seat that fell some 21,000 feet and was examined only after it was moved from the accident site.[\[fn36\]](#) We cannot agree. Although the evidence in support of the district court's findings is neither closed to question nor uncontroverted by other evidence, our review of the record does not leave us with a definite and firm conviction that a mistake has been committed. As required by Fed.R.Civ.Pro. [52\(a\)](#), we defer to the district court's findings.

D.

[31] Because this case involves strict liability and negligence under Texas law, it is subject to the comparative causation analysis the Texas Supreme Court established in *Duncan v. Cessna Aircraft Co.*[\[fn37\]](#) Because we reverse the first of the district court's three findings of pilot negligence, and we cannot tell the extent to which this fact

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finding affected the district court's holding that Baker's negligence was 60 percent responsible for the accident, we remand the case to the trial court for a redetermination of the comparative responsibility of the two defendants found liable in this case, Mitsubishi and Baker.[\[fn38\]](#)

IV.

[32] This was a bench trial. During the trial, the United States offered as evidence some of Baker's training records from a flight school refresher course and the deposition of Carlos Aguero, one of the three course instructors. Among other things, this evidence indicates that Aguero gave Baker low marks in handling emergency situations during a flight simulator test, considered him weak in aircraft knowledge and instrument flying, and (thinking Baker was not himself a professional pilot) recommended that Baker hire a professional pilot to fly with him. Before the trial began, Baker's estate challenged this evidence as inadmissible under Fed.R.Evid. [404](#) and, at the trial's outset, the district court ruled the evidence admissible. This was

erroneous, and would be grounds for reversal were this a jury trial. It is not, however, grounds for reversal here.

[33] Under Fed.R.Evid. 404, evidence of Baker's past conduct is not admissible to prove that he acted in conformity with that conduct on the afternoon of this crash, but it is admissible to rebut evidence of Baker's past good conduct as a pilot offered in his defense.^[fn39] The contested evidence has no probative value other than to prove action in conformity with Baker's past conduct. Because the district court ruled the evidence admissible before any other evidence was presented, there was no reason to believe Baker's estate would put into issue Baker's character as a pilot.^[fn40] Indeed, by ruling as it did when it did, the trial court gave Baker's estate little choice but to introduce evidence of Baker's good conduct as a pilot; it cannot fairly be said that Baker's estate put the subject into issue.

[34] Thus, strict application of Fed.R.Evid. 404 should exclude this evidence. But, as this court stated in *Null v. Wainwright*, "[s]trict evidentiary rules of admissibility are generally relaxed in bench trials, as appellate courts assume that trial judges rely upon properly admitted and relevant evidence".^[fn41] The district court did not rely upon this evidence in making its three pilot negligence findings.^[fn42] Nor do we find it necessary to rely upon it in affirming two of those findings. In short, we have no reason to think the district court's verdict would have been different had the evidence of Baker's refresher course performance not been introduced.

V.

[35] We now turn to the district court's damages rulings. The court awarded damages

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for the plaintiffs' pecuniary loss as well as damages for their nonpecuniary losses of consortium, companionship, advice, and nurture. The appellants challenge the court's denial of damages for their mental anguish and the court's denial of any explicit award of damages for their loss of inheritance.^[fn43]

A.

[36] Although in a Texas wrongful death action plaintiffs may recover damages for their mental anguish,^[fn44] the district court denied such damages for two reasons. First, at the time of this trial, damages for mental anguish were allowed only in cases of willful disregard, gross negligence, or intentional tort, or when it was proved that the mental anguish caused the plaintiffs some physical harm.^[fn45] Second, although the plaintiffs in this case produced evidence of their good family relationships, they did not distinguish between the evidence offered to prove mental anguish and that offered to prove loss of companionship. Because mental anguish and loss of companionship are separate items of recovery, the district court reasoned that they should be established by independent proof and ruled that the plaintiff's failure appropriately to earmark the evidence was further reason to reject the plaintiff's request for damages for mental anguish.

The court cited a Texas Court of Appeals case, *Moore v. Lillebo*,[\[fn46\]](#) in support.

[37] After the district court's judgment, however, in *Moore v. Lillebo*, the Texas Supreme Court abolished the physical manifestation requirement in wrongful death cases.[\[fn47\]](#) *Moore* further holds that proof of family relationship is evidence of mental anguish.[\[fn48\]](#) The Texas Supreme Court's analysis of the evidence in *Moore* abolishes any requirement that wrongful death plaintiffs make a clear distinction between evidence they offer to prove mental anguish and that offered to prove loss of companionship.[\[fn49\]](#) Rather, *Moore* offers detailed guidance for a trier of fact to use in making the two awards:

[M]ental anguish shall be defined as the emotional pain, torment, and suffering that the named plaintiff would, in reasonable probability, experience from the death of the family member. Companionship and society shall be defined as the positive benefits flowing from the love, comfort, companionship, and society the named plaintiff would, in reasonable

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probability, experience if the decedent lived.

In awarding damages for mental anguish and loss of society and companionship in a wrongful death case, the trier of fact shall be instructed that it may consider (1) the relationship between husband and wife, or a parent and child; (2) the living arrangements of the parties; (3) any absence of the deceased from the beneficiary for extended periods; (4) the harmony of family relations; and (5) common interests and activities.[\[fn50\]](#)

[38] In *Vandenbark v. Owens-Illinois Glass Co.*,[\[fn51\]](#) the United States Supreme Court held that, if a state law changes during the course of the litigation, "the duty rests upon the federal courts to apply state law under the Rules of Decision statute in accordance with the *then* controlling decision of the highest state court."[\[fn52\]](#) Following *Vandenbark*, it is the practice of this court to remand an issue to the trial court when there is a change in relevant state law during the pendency of an appeal.[\[fn53\]](#)

[39] But this practice may run afoul of *Erie* when the intervening change in state law would not have been applied retroactively by the state courts themselves.[\[fn54\]](#) Nonetheless, no such problem faces us here. We are convinced that the Texas Supreme Court would apply the rule of *Moore* to cases *sub judice* at the time of that decision. Not only does *Moore* note that the physical manifestation requirement has long been applied so leniently by most Texas courts as to have lost any of its former significance,[\[fn55\]](#) the opinion shows a strong intention to abandon all artificial restrictions on mental anguish recovery – particularly in wrongful death cases.[\[fn56\]](#) Moreover, it appears that the lower Texas courts read *Moore* to apply retroactively.[\[fn57\]](#)

[40] Accordingly, we remand the case to the trial court for consideration of the plaintiffs' claims for mental anguish damages in the light of *Moore*.

B.

[41] We now address loss of inheritance damages. Texas wrongful death plaintiffs are

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entitled to damages for two types of financial losses resulting from the death: "pecuniary loss" and loss of inheritance.^[fn58] Pecuniary loss is generally defined as the care, maintenance, support, services, advice, counsel and reasonable contributions of a pecuniary value that the plaintiffs would, in reasonable probability, have received from the decedent had he lived.^[fn59] As this court noted in *Simpson v. United States*,^[fn60]

Although the trier of fact is not *limited* in wrongful death actions to a computation of pecuniary loss based upon the projection into the future of [the] deceased's past earnings, this is the basic or primary element of such awards.^[fn61]

[42] When some of the decedent's pecuniary contributions derive from investments that continue to benefit the plaintiff, pecuniary loss consists primarily of contributions from salary.^[fn62]

[43] Since the Texas Supreme Court's decision in *Yowell v. Piper Aircraft Corp.*,^[fn63] Texas wrongful death plaintiffs have also been entitled to damages for loss of inheritance:

We define loss of inheritance damages in Texas as the present value that the deceased, in all reasonable probability, would have added to the estate and left at natural death to the statutory wrongful death beneficiaries but for the wrongful act causing the premature death. True, not every wrongful death beneficiary sustains loss of inheritance damages. If the decedent would have earned no more than his family would have used for support, or if the decedent would have outlived the wrongful death beneficiary, loss of inheritance damages would be properly denied. This is for the jury to decide.^[fn64]

[44] Thus, under Texas law, damages for loss of inheritance are distinct from damages for pecuniary loss. Further, loss of inheritance damages are appropriate only where the wrongful death plaintiff shows that the decedent (1) would have enhanced his estate by some amount by saving some of his earnings or by prosperous management of his investments, and (2) would, in all reasonable probability, have left that amount upon his natural death to the plaintiff. Finally, the trier of fact has broad discretion to decide whether loss of inheritance damages are appropriate.

[45] At trial, the decedents' tax returns for several years prior to their deaths were introduced as evidence of their earnings. The plaintiffs also offered testimony of business partners, friends, and family to show that the three Hutchinson brothers were young, ambitious, and successful entrepreneurs – "big earners" with a variety of valuable investments. These same witnesses testified that the value of these investments was substantially reduced by the brothers' deaths. The Hutchinson brothers' families, plaintiffs here, inherited these investments. Harold B. Moorhead's family, friends, and co-workers testified about his association with the Hutchinson brothers' businesses. Moorhead was not an owner of the business, but drew a substantial salary. His wife testified that he would have worked past age 65. Similar testimony suggests that all the decedents were loving and generous to their families.

[46] The district court awarded the plaintiffs damages for their pecuniary loss, using the tax returns as the basis for its estimates of the decedents' future earnings. The court also found that the plaintiffs had failed to prove any explicit loss of inheritance. There is no clear error in these rulings.

[47] It is important to note that the district court's damage award contains some implicit compensation for the plaintiffs' loss of inheritance. As pecuniary loss damages, the district court awarded the plaintiffs the present value of the *full* amount of the decedents' future salaries, net of taxes and the decedents' personal expenses.^[fn65] Accordingly, this award includes both the portion of the salary that would have been spent to support the plaintiffs and any amount the decedents would have saved.^[fn66] It is unlikely, and the district court did not assume, that the decedents and their families would have consumed all of their future, after-tax salaries.

[48] Although the value of the decedents' investments might have been enhanced had they lived to manage them, and the decedents might have left this enhanced value to the plaintiffs, the district court was well within its discretion to discount the testimony of the decedents' business partners, friends and family. Further, a substantial amount of speculation is required to determine the amount in excess of what the plaintiffs actually inherited, if any, that the decedents would have accumulated and left to the plaintiffs. *Yowell* gives the trier of fact the right to engage in – or refuse – such speculation.

[49] The judgment of the district court is AFFIRMED in part, REVERSED in part, and the case is REMANDED for a reallocation of liability between Raymond D. Baker and Mitsubishi Aircraft International, Inc. and a trial on the issue of damages for mental anguish.

[fn1] Except as indicated, all of the facts presented here are those stipulated in the pretrial order.

[fn2] The four passengers were James A. Hutchinson, William R. ("Bob") Hutchinson, and Thomas L. Hutchinson, brothers who together owned and operated Brigadier Industries, a mobile home manufacturer, and Harold B. Moorhead, the attorney for Brigadier and the Hutchinson family. Brigadier employed Baker as a pilot.

[fn3] The National Weather Service issues an area forecast each twelve hours. Each forecast covers a large area and is valid for 19 hours or until the next forecast is issued.

[fn4] There are four levels of icing intensity: "trace", "light", "moderate", and "severe". There are two types of ice: "rime", ice with substantial air content (such as the frost accumulating on the inside walls of a refrigerator), and "clear", hard ice with relatively little air content. "Mixed icing" means both rime and clear icing.

[fn5] The entire briefing, lasting about five minutes, was recorded. We reproduce the pertinent parts here.

1925:07 [Briefer:] Dallas Flight Service oh stand by
please (pause) OK thank you for waiting can I help
you

1925:14 [Baker:] Yes sir uh this is Ray Baker
Mitsubishi two three three mike alpha like to check
the forecast leaving Dallas Love about five o'clock
going to Augusta Georgia over Texarkana Greenwood
Birmingham and Atlanta

1926:39 [Briefer:] Uh (pause) uh Gregg County Gregg
County is showing an area of uh two tenths coverage
of thunderstorms and rainshowers from uh two
hundred and forty east two uh five southeast again
thats going to be south of your route of flight

1927:02 [Baker:] Uh

1927:03 [Briefer:] Uh there's going to be a lot of
stratus you're going to be how high

1927:07 [Baker:] Oh probably twenty one

1927:09 [Briefer:] Twenty one OK uh you'll probably
be on top of most everything except the cirrus
clouds

1927:14 [Baker:] Uh huh

1927:15 [Briefer:] Uh Texarkana says uh fifteen uh
seventeen hundred broken fifteen thousand overcast

five miles haze and smoke some rainshowers of unknown intensity uh I'm just looking to see and there's a lot of precip throughout the whole area uh Greenwood two thousand broken and ten Birmingham twenty eight hundred scattered forty five hundred broken ten miles with rain some of the activity may be caused by some thundershower activity or you know some pretty good sized buildups so you get your radar right

1927:42 [Baker:] Right

1927:43 [Briefer:] Here you can probably get around most everything you need to uh as far a forecast along your route of flight it looks like mostly just uh stratus and us alto cumulus clouds uh two thousand ten thousand in the Dallas area and from Texarkana on they're talking about a chance for thundershower activity.

[fn6] The NTSB computed the speed estimates by using radar data. Although the specific numbers are inexact, they are nonetheless useful.

[fn7] This finding is not challenged on appeal.

[fn8] Uncontested evidence establishes that there are only two likely explanations for the plane's gradual slowing after levelling off at 21,000 feet: either Baker reduced power or the accumulation of ice increased the drag on the plane. The parties considered engine malfunction and several other potential causes and eliminated them before trial. The district court rejected the reduction in power theory in light of the meteorological evidence of ice and the evidence that Baker would have had to reduce power substantially to slow the plane by 50 knots. None of the parties challenge this finding.

[fn9] The Hutchinson brothers' survivors and Moorhead's survivors sued the plane's manufacturer, Mitsubishi Aircraft International, Inc., the government, and the pilot's estate. Baker's survivors sued Mitsubishi and the government. The claims against Baker's estate and Mitsubishi arise under the Texas Wrongful Death Act and Survival Statute, Texas Civil Practice & Remedies Code §§ 71.001-71.021 (Vernon 1986), and are governed by the Texas law of negligence and strict products liability. The United States' liability in this crash is also governed by Texas law. [28 U.S.C.A. § 2674](#) (West 1965). See *Brooks v. United States*, [695 F.2d 984](#), [987](#) (5th Cir. 1983).

[fn10] All the plaintiffs (including Baker's survivors) settled

with Mitsubishi before trial. Mitsubishi remains defendant to allow the court to apportion cause and determine the liability of the other defendants. See *Duncan v. Cessna Aircraft*, [665 S.W.2d 414](#), [420](#) (Tex. 1984).

[fn11] *Lucas v. Texas Industries, Inc.*, [696 S.W.2d 372](#), [376-77](#) (Tex. 1984).

[fn12] *Nixon v. Mr. Property Management Co., Inc.*, [690 S.W.2d 546](#), [549](#) (Tex. 1985).

[fn13] This duty is rooted in both general pilot reliance for the service, *Gill v. United States*, [429 F.2d 1072](#), [1075](#) (5th Cir. 1970), and the briefers' manual. See FAA, *Flight Services Handbook 7110.10F* § 167(b)(1) (1981) ["*Flight Services Handbook*"].

[fn14] See *Pierce v. United States*, [679 F.2d 617](#), [621](#) (6th Cir. 1982).

[fn15] See *Davis v. United States*, [824 F.2d 549](#), [552-53](#) (7th Cir. 1987); *Flight Services Handbook* § 167(b).

[fn16] *Flight Services Handbook* § 167(a).

[fn17] *Id.* § 167(b).

[fn18] *Id.* § 167(a). The area forecast in issue here filled two single-spaced pages. Reading it verbatim would take up almost five minutes, the duration of Baker's entire briefing.

[fn19] *Id.* § 165.

[fn20] [333 U.S. 364](#), [395](#), [68 S.Ct. 525](#), [542](#), 92 L.Ed. 746 (1948). See *Pullman-Standard v. Swint*, [456 U.S. 273](#), [284](#) n. 14, [102 S.Ct. 1781](#), [1788](#) n. 14, 72 L.Ed.2d 66 (1982) (quoting *United States Gypsum*); *Smith v. Hightower*, [693 F.2d 359](#), [370](#) (5th Cir. 1982). See also *Boeing Co. v. Shipman*, [411 F.2d 365](#), [374](#) (5th Cir. 1969) (en banc) ("On motions for directed verdict and for judgment notwithstanding the verdict the court should consider all of the evidence – not just that evidence which supports the non-mover's case – but in the light and with all reasonable inferences most favorable to the party opposed to the motion.").

[fn21] [720 F.2d 1391](#), [1395-96](#) (5th Cir. 1983).

[fn22] Numerous witnesses testified to this point. Witnesses also testified that pilots such as Baker know, or should know, the freezing level by using their outside temperature gauge, and that, because Baker had turned on his engine air inlet heat during the climb, he must have known he was above the freezing level. Other witnesses testified that the freezing level in Texas is almost never below 21,000 feet.

[fn23] *Davis*, [824 F.2d 549](#), [555](#) (7th Cir. 1987).

[fn24] As the district court noted, the plaintiffs cannot rely on conjecture and speculation to satisfy their burden of proof. *McCandless v. Beech Aircraft Corp.*, [779 F.2d 220](#), [223](#) (5th Cir. 1985). Also, Baker's decision to fly in spite of his knowledge of thundershower activity and his decision to fly slightly closer to the activity than the route he originally gave the briefer suggest that the icing forecast would not have influenced Baker to alter his flight significantly.

[fn25] For example, several witnesses testified that an encounter with moderate mixed icing is "not a panic situation", and that competent pilots usually handle the amount of ice Baker accumulated without difficulty.

[fn26] For example, in *Black v. United States*, [441 F.2d 741](#) (5th Cir. 1971), *cert. denied*, 404 U.S. 913, 92 S.Ct. 233, 30 L.Ed.2d 186, this court stated that:

When the pilot saw the storm he had to make a decision either to proceed, to alter or reverse his course, or to land. His decision was to proceed. From then on can it be said that the failure of the operator almost two hours earlier to warn him of [a thunderstorm warning] proximately contributed to that decision? We think not.

Id. at 745.

[fn27] Because these recommendations, by the NTSB and Mitsubishi, were advisory only, they were not offered to prove that Baker or Brigadier were negligent in failing to modify the Pitot system. Nor do we here suggest that they are evidence of their negligence.

[fn28] In addition to the type of malfunction the court found in this case, Coogan explained another: if the Pitot system has an outflow vent and the Pitot tube freezes so that the intake vent is closed, the pressure in the tube will "bleed off" and vary with the ambient air pressure. Accordingly, both the ambient and

ram air pressure readings will reflect ambient air pressure. Because the system calculates airspeed from the difference between the two readings, the result will be an indicated airspeed of zero.

The appellants point us to the district court's fact finding 49, which states:

The pressure inside the tube was trapped, and eventually equilibrated with the outside air pressure. As a result, the pressure inside the tube varied according to the outside air pressure, causing the plane's air speed indicator to function like an altimeter. At higher altitudes, . . . the indicated airspeed would be higher. During level flight, . . . the indicated airspeed . . . would remain constant regardless of the plane's actual speed.

This indicates that the district court confused the causes and effects of the two types of Pitot system malfunctions.

[fn29] Further, Coogan's testimony suggests that the Pitot system in Baker's plane had no outflow vent. This would rule out the zero reading suggested by the appellants. See note 28.

[fn30] *American Airlines, Inc. v. United States*, [418 F.2d 180, 192](#) (5th Cir. 1969); 14 C.F.R. § 91.2 (1985).

[fn31] [455 F.2d 222, 226-27](#) (9th Cir. 1972) (footnotes omitted) (applying Texas law). See also *Davis*, [824 F.2d 549](#) (7th Cir. 1986); *United States v. Neff*, [420 F.2d 115, 120](#) (D.C. Cir. 1969); *Black*, [441 F.2d at 745](#).

[fn32] See *White*, [720 F.2d at 1395-96](#).

[fn33] *Black*, [441 F.2d at 743](#); *Peters*, [596 F. Supp. at 895-96](#).

[fn34] We note also that, even though the Pitot system's erroneously high airspeed readings may have led Baker to discount the effects of the ice he could see accumulating on his wings, it is not unreasonable for the district court to conclude that, having seen the ice accumulating on his wings, Baker's response was still imprudently delayed and inappropriate.

[fn35] On appeal, Baker's estate contends that the district court found that Baker was not using a cushion on this flight. This is incorrect; the court found otherwise. Also, Coogan testified that no adjustment had been made to the rudder pedals that would allow Baker – even if he were using a cushion – to depress them fully.

[fn36] At the trial, however, these same appellants made no attempt to cross examine Coogan, an experienced accident investigator, on these subjects and offered no evidence on the matter themselves.

[fn37] [665 S.W.2d 414](#) (Tex. 1984).

[fn38] See *Brooks*, [695 F.2d at 990-91](#).

[fn39] See, e.g., *Croce v. Bromley Corp.*, [623 F.2d 1084, 1091-92](#) (5th Cir. 1980). Fed.R.Evid. [404](#) provides:

(a) Character evidence generally. Evidence of a person's character or a trait of character is not admissible for the purpose of proving action in conformity therewith on a particular occasion, except:

(1) Character of accused. Evidence of a pertinent trait of character offered by an accused, or by the prosecution to rebut the same;

(2) Character of victim. Evidence of a pertinent trait of character of the victim of the crime offered by an accused, or by the prosecution to rebut the same, or evidence of a character trait of peacefulness of the victim offered by the prosecution in a homicide case to rebut evidence that the victim was the first aggressor;

(3) Character of witness. Evidence of the character of a witness, as provided in Rules 607, 608, and 609;

(b) Other crimes, wrongs, or acts. Evidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show action in conformity therewith. It may, however, be admissible for other purposes, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, or absence of mistake or accident.

[fn40] The brief in support of the motion in limine states that Baker's estate wished to do nothing of the sort.

[fn41] [508 F.2d 340, 344](#) (5th Cir. 1975). See also *United States v. Compania Cubana de Aviacion, S.A.*, [224 F.2d 811, 820-21](#) (5th Cir. 1955).

[fn42] The district court simply noted the testimony as

"corroborative", although "not necessary to the finding of pilot negligence".

[fn43] The plaintiffs also contend that the district court's denial of damages for the decedents' pre-crash conscious pain and suffering is clearly erroneous. We see no merit in this argument. Under Texas law, a trier of fact *may* find that conscious pain and suffering is established by circumstantial evidence. See *Green v. Hale*, [590 S.W.2d 231](#), [237](#) (Tex.Civ.App.-Tyler 1979). See also *Hurst Aviation v. Junell*, [642 S.W.2d 856](#), [859](#) (Tex.Civ.App. – Ft. Worth 1982). Yet, there is certainly no requirement that they do so. See *Air Florida v. Zondler*, [683 S.W.2d 769](#), [774-75](#) (Tex.Civ.App.-Dallas 1984). The burden is on the plaintiffs to establish the decedents' conscious pain and suffering by a preponderance of the evidence. *Moore v. Lillebo*, [674 S.W.2d 474](#), [478](#) (Tex.Civ.App.-El Paso 1984), *rev'd on other grounds*, [722 S.W.2d 683](#) (Tex. 1986). All indications are that the pilot and passengers occupants were killed instantly in the crash. The record contains no evidence as to what happened inside the plane before its crash. The district court is well within its discretion in refusing to speculate about how much, if at all, Baker's passengers were aware and fearful of their plight. *In re Dearborn Marine Service*, [499 F.2d 263](#), [288](#) (5th Cir. 1974) (applying Texas law).

[fn44] *Cavnar v. Quality Control Parking, Inc.*, [696 S.W.2d 549](#), [551](#) (Tex. 1985); *Sanchez v. Schindler*, [651 S.W.2d 249](#), [250](#) (Tex. 1983).

[fn45] See, e.g., *Duncan v. Luke Johnson Ford*, [603 S.W.2d 777](#), [779](#) (Tex. 1980) (discussing recovery for mental anguish).

[fn46] [674 S.W.2d at 477](#), *rev'd* [722 S.W.2d 683](#) (Tex. 1986).

[fn47] [722 S.W.2d 683](#) (Tex. 1986). The Texas court held that:

In a wrongful death cause of action, it is no longer necessary to prove that mental anguish is physically manifested. A physical manifestation of mental anguish is evidence of the extent or nature of the mental anguish suffered, but it is no longer the only proof of mental anguish.

Id. at 686.

[fn48] *Id.*

[fn49] See *id.* at 686-87.

[fn50] *Id.* at 688. The court further noted:

The trier of fact should also be instructed that mental anguish and loss of society and companionship are separate elements of recovery. Damages should not overlap, and no double recovery should be allowed.

Id.

[fn51] [311 U.S. 538](#), [61 S.Ct. 347](#), 85 L.Ed. 327 (1941).

[fn52] [311 U.S. at 543](#), [61 S.Ct. at 350](#), 85 L.Ed. at 330 (emphasis added). See also *United States v. Schooner Peggy*, 1 Cranch 103, 110, 2 L.Ed. 49, 51 (1801), quoted in *Vandenbark*, [311 U.S. at 541](#), [61 S.Ct. at 349](#), 85 L.Ed. at 329.

[fn53] See, e.g., *Royal Bank of Canada v. Trentham Corp.*, [665 F.2d 515](#), [516-18](#) (5th Cir. 1981); *Pesantes v. United States*, [621 F.2d 175](#), [179](#) (5th Cir. 1980); *Samuels v. Doctors Hospital, Inc.*, [588 F.2d 485](#), [488-89](#) (5th Cir. 1979); *Downs v. J.M. Huber Corp.*, [580 F.2d 794](#), [795-97](#) (5th Cir. 1978).

[fn54] The "hard and fast" reading of *Vandenbark*, applied by the Ninth Circuit in *Nelson v. Brunswick Corp.*, [503 F.2d 376](#), [381-82](#) & n. 12 (9th Cir. 1974), seems to conflict with the general *Erie* principles by giving retroactive application to a new state law rule even when the state's highest court would not. See *Royal Bank of Canada*, [665 F.2d at 517](#); *Samuels*, [588 F.2d at 488-89](#); *Downs*, [580 F.2d at 796](#). See also 1A-Pt 2 Moore's Federal Practice ¶ 0.307[3] at 3104-07 (2d ed. 1985) (arguing that federal appellate courts should apply an intervening change in state law retroactively only when the state's courts would do so).

[fn55] *Moore*, [722 S.W.2d at 686](#).

[fn56] Before announcing its holding, the *Moore* court stated:

In most death cases, the emotional impact of the loss of a beloved person "is the most significant damage suffered by surviving relatives."

Id. at 685, quoting S. Speiser and S. Malawer, *An American Tragedy: Damages for Mental Anguish of Bereaved Relatives in Wrongful Death Actions*, 51 Tulane L.Rev. 1, 17 (1976). The Court's strong disapproval of the "physical manifestation" requirement is corroborated in its subsequent opinion rejecting the physical manifestation requirement in cases of negligent infliction of mental anguish. See *St. Elizabeth Hospital v. Garrard*, [730 S.W.2d 649](#), [851-54](#) (Tex. 1987).

[fn57] See *Whipple v. Deltscheff*, [731 S.W.2d 700](#), [703](#) (Tex.Civ.App.-Houston 1987) (affirming trial court's pre-Moore refusal to require proof of physical manifestation); *Johnson v. Holly Farms of Texas, Inc.*, [731 S.W.2d 641](#), [647](#) (Tex.Civ.App.-Amarillo 1987) (same).

[fn58] See *Moore*, [722 S.W.2d at 687](#).

[fn59] *Id.* See also 3 State Bar of Texas, *Texas Pattern Jury Charges* PJC 81.01, 81.02, 81.05 (Supp. 1984).

[fn60] [322 F.2d 688](#) (5th Cir. 1963).

[fn61] *Id.* at 691 (emphasis in original). See also *Dover Corp. v. Perez*, [587 S.W.2d 761](#), [770](#) (Tex.Civ.App.-Corpus Christi 1979); *Best Steel Bldgs., Inc. v. Hardin*, [553 S.W.2d 122](#), [133](#) (Tex.Civ.App.-Tyler 1977); *Halliburton Co. v. Olivas*, [517 S.W.2d 349](#), [354](#) (Tex.Civ.App.-El Paso 1974).

[fn62] See *San Antonio & A.P. Ry. Co. v. Long*, [87 Tex. 148](#), [27 S.W. 113](#), [117](#) (Tex. 1894), *overruled on other grounds*, *Sanchez*, [651 S.W.2d 249](#) (Tex. 1983).

[fn63] [703 S.W.2d 630](#) (Tex. 1986).

[fn64] *Id.* at 633.

[fn65] To calculate the plaintiffs' pecuniary losses, the district court first projected the decedents' gross future salaries. Income from the decedents' properties and other investments, which the plaintiffs inherited, were not considered. The court next subtracted from these gross salary projections the amount that would have gone toward taxes and the decedents' personal expenses. Finally, the court converted the resulting net future salary figures into present value terms. Damages finding 7, 8, 9. These calculations are not challenged on appeal and we find no fault in them. See *Culver v. Slater Boat Co.*, [722 F.2d 114](#), [117](#) & n. 3 (5th Cir. 1983) (en banc) (describing the method for calculating income loss in maritime personal injury cases).

[fn66] The district court refers to this component of the plaintiffs' pecuniary loss as "lost salary" rather than merely "loss of support". Damages finding 7, 8.
