Initial and Continuing Responsibilities of General Aviation Manufacturers

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INITIAL AND CONTINUING RESPONSIBILITIES OF GENERAL AVIATION MANUFACTURERS

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I. INTRODUCTION

Even more than tort law in general the law of aviation is in a state of flux. Compared with ordinary torts, aviation accidents have traditionally been more spectacular, the resulting damage in lives and property more severe, and thus the liability more substantial. Practitioners in the aviation litigation field have consequently expanded their search for solvent defendants. Not infrequently that search has ended with the aviation manufacturer. The current development of much larger aircraft has added new dimensions to the already astronomical damage potential confronting aviation manufacturers and their insurers.

These technological portents of increased damage recoveries in aviation litigation are augmented by the continued expansion of products liability concepts. This article does not purport to exhaustively survey the duties of aviation manufacturers. Rather, it will focus on four categories of duty owed by general aviation manufacturers. Specifically, the examination will focus on the duty of manufacturers (1) to make repair information available to owners; (2) to report repair discrepancies to the FAA; (3) to assume liability from the assembly of associated components; and (4) to make modifications and improvements.¹

The following material seeks to examine the relevant regulations and statutes which delineate the initial and continuing responsibilities of aviation manufacturers, analyze the common law sources of liability and consider the regulatory duties interaction with common law liability.

II. REGULATORY FRAMEWORK

A. History

The Secretary of Commerce was granted the initial authority to promulgate safety regulations applicable to air commerce and aircraft manu-

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¹ These four topics formed the core of Mr. L. S. Carsey's presentation to The Journal of Air Law & Commerce Symposium on General Aviation Law held at Dallas, Texas, March 17-19, 1971.
facturing in the Air Commerce Act of 1926. In 1938, the Civil Aeronautics Act created an Air Safety Board empowered to promulgate and enforce safety standards for air commerce and the manufacture of aircraft and aircraft appliances. Before the Air Safety Board established a working organization, it was abolished by an administrative re-organization plan in 1940. This plan divided the functions of the Air Safety Board and the organization under the Civil Aeronautics Act of 1938 between a Civil Aeronautics Board and a Civil Aeronautics Administration. In 1948, the Civil Aeronautics Board transferred authority for promulgating safety regulations for aircraft under 12,500 pounds to the Civil Aeronautics Administration. A comprehensive reorganization and extension of safety regulation and enforcement resulted from the Federal Aviation Act of 1958. The act designates the Federal Aviation Administration as the safety regulating authority and lodges enforcement powers in its Administrator.

B. Implementation of the Safety Regulations

The 1938 Civil Aeronautics Act granted broad authority to promulgate standards to regulate manufacturing industries associated with the manufacture and assembly of aircraft and aircraft components. The Act's objectives were implemented by establishing standards for certifying aircraft and aircraft components at the design, production and flight stages. That regulatory format has persisted.

The regulatory procedure initially entails the issuance of the Type Certificate. The Type Certificate will be issued only upon a showing that the design of a specific aircraft or aircraft components meets the detailed standards for operation, air safety, material and performance. Once granted, the Type Certificate operates as a license to produce the aircraft or component. The original Type Certificate holder may produce the aircraft or component or grant a sublicense to another manufacturer.

Actual production under the Type Certificate involves the second
facet of regulation which is the Production Certificate.\textsuperscript{14} Any person who produces for marketing a given type of aircraft or component must have a Production Certificate to certify that all reproduced aircraft and components will meet the standards and specifications enumerated in the Type Certificate.\textsuperscript{15} Except for a limited provision which permits the reproduction of aircraft pursuant only to the Type Certificate,\textsuperscript{16} each manufacturer must possess a current Production Certificate for any aircraft or aircraft component which it markets.\textsuperscript{17} The Production Certificate specifies the manner in which the manufacturer purchases materials,\textsuperscript{18} and establishes quality control testing and inspection procedures.\textsuperscript{19} Manufactured components which are assembled must be systematically inspected and tested prior to final certification of the aircraft.\textsuperscript{20} Both Type and Production Certificates apply to finished aircraft as well as certain appliances to be used on the aircraft.\textsuperscript{21} These appliances include propellers and aircraft engines, though they are ultimately assembled by another manufacturer. Thus, quality control standards and safety regulations are implemented at various phases of the production stage before final assembly of the aircraft.\textsuperscript{22}

Upon final assembly and distribution of the aircraft, the last stage of the regulatory scheme for implementing preventive safety measures entails the issuance of an Airworthiness Certificate.\textsuperscript{23} It is unlawful to operate an aircraft in air commerce either without a current Airworthiness Certificate or in violation of its provisions.\textsuperscript{24} At all three stages of the certification procedures, the 1958 Act makes it unlawful for anyone to produce, distribute or operate an aircraft in violation of the respective certificates.\textsuperscript{25} Administrative enforcement procedures include the imposition of fines\textsuperscript{26} or the revocation of the aircraft or component's certificate, which will disallow the production, sale or operation of the aircraft in commerce, depending on the nature of the certificate revoked.\textsuperscript{27}

\textsuperscript{15} 14 C.F.R. § 21.165(b) (1970).
\textsuperscript{17} 14 C.F.R. § 21.163 (1970).
C. Airworthiness Directives

The three certification stages are augmented by the Administrator's frequent issuance of airworthiness directives. These directives may require the holder of a Type or Production Certificate to make design or structural changes in the aircraft or aircraft appliance which are needed to correct a defect or unsafe condition. The airworthiness directives are issued pursuant to the procedures set out in the Code of Federal Regulations and are utilized to compel the making of safety improvements by aircraft designers, manufacturers or operators, depending on the nature of the needed alteration. A violation of an airworthiness directive also constitutes a violation of the Federal Aviation Act of 1958. A violator may, thus, be subject to civil penalties and revocation or suspension of his certificate.

There are several specific regulations bearing on the manufacturer's initial and continuing responsibilities to make repair and maintenance information available to purchasers and to report discovered aircraft and component defects that have escaped the manufacturer's quality control systems which might result in one of the enumerated occurrences.

D. Maintenance Manuals and Reporting Obligations

A new regulation requires the manufacturer of general utility and acrobatic light aircraft to provide the immediate purchaser with a maintenance manual describing the operating limitations of the aircraft or aircraft appliances and also listing the necessary steps for proper maintenance. The manual must pin-point any apparatus that requires periodic inspection or service and must also list any necessary special tools.

When the regulation was originally promulgated, the Administrator noted that the hearings on the regulation reflected a general public concern for the manufacturer's furnishing inadequate information to the new aircraft purchaser.

The purpose of these amendments to Parts 23 and 25 of the Federal Aviation Regulations is to provide maintenance manuals for airplanes type certified under Parts 23 and 25 of the Federal Aviation Regulation.

... [T]he FAA is aware that some manufacturers provide or make available manuals containing maintenance information. However, the FAA is not aware that all manufacturers make all the information considered essential for proper maintenance available at the time of delivery

33 Id.
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of an airplane. Furthermore, there are no standards prescribing the minimum content, distribution and time the information must be available to the person who needs it. The majority of airplanes built today, both large and small, are more complex than those built in the past. New materials and new fabrication methods are being used and sophisticated equipment is being installed; all of which require instructions and techniques which are not common knowledge or used on older airplanes. The FAA recognizes that maintenance practices and requirements are not static and may change as information is developed during the service life of an airplane. Nevertheless, the information contained in the manual will increase the likelihood of satisfactory maintenance during the earliest stages of operation of the airplane.\[84\]

An identical regulation applies to transport category aircraft.\[85\]

Besides requiring the manufacturer to provide information to the initial purchaser, the regulations also require that the design change data submitted in compliance to an airworthiness directive be distributed to all owners and operators of products which are certified under the pre-amended Type Certificate. This regulation provides:

(a) When an Airworthiness Directive is issued under Part 39 the holder of the type certificate for the product concerned must—

(1) If the administrator finds that design changes are necessary to correct the unsafe condition of the product, and upon his request, submit appropriate design changes for approval; and

(2) Upon approval of the design changes, make available the descriptive data covering the changes to all operators of products previously certificated under the type certificate.\[86\]

Thus, Type Certificate holders and licensees owe a continuing duty to supply the information that will enable aircraft owners and operators to conform their aircraft to the airworthiness directives' safer design standards.

Regulation 21.99, subsection (b), is a permissive regulation which authorizes a holder of the Type Certificate to contribute type design changes which will enhance the certified product's safety.\[87\] Upon approval of these changes, the manufacturer must make the design change information available to all current product operators.\[88\] The manufacturer's continuing duty to notify aircraft operators of design changes embraces those changes required by the Administrator pursuant to an airworthiness directive and those approved design changes volunteered pursuant to Regulation 21.99, subsection (b).

Another recent regulation requires Type and Production Certificate


\[85\] 14 C.F.R. § 25.1529 (1970)


\[88\] *Id.*
holders to report to the FAA any failure, malfunction or defect in any product or part manufactured by the holder that is determined to have resulted in any of thirteen enumerated occurrences. These occurrences include fire, exhaust system failure, malfunction or defect in developed control structure or flight control system malfunction and others. The reporting obligation is expressly conditioned on the holder's determination that the failure, malfunction or defect was not caused by improper maintenance or improper usage. If the manufacturer determines that either of these factors was the cause of the occurrence, then he is exempted from reporting. In addition, there is no reporting obligation if the manufacturer knows that the occurrence has already been reported to the FAA.

Manufacturers who operate under the abbreviated administrative procedures authorized by the regulations owe additional reporting obligations to the FAA. The Delegation Option Authority and Technical Standard Order Authorizations permit manufacturers to inspect and test their own products independent of direct FAA supervision. The regular maintenance of detailed inspection and testing records substitutes for direct FAA intervention at this stage. The records must be available to the FAA to insure compliance with the established standards. Those operating under the Technical Standard Orders Authorization are subject to the same duty to report malfunctions and defects as manufacturers holding Type Certificates under the regulation discussed in the preceding paragraphs.

The Regulations establish the airworthiness standards for normal utility and acrobatic category aircraft and for transport aircraft. The operating limitations listed on these aircraft Type Design Certificates must be furnished to the initial purchasers. The airplane flight manuals must also include "any information not specified in Sections 23.1583 through 23.1589 that is required for safe operation because of unusual design, operating, or handling characteristics." Manufacturers are thus required to furnish purchasers an airplane flight manual with all information necessary to the safe operation of the aircraft.
The reporting duty imposed in keeping with the current regulatory framework for insuring the design, production and maintenance of safe and airworthy aircraft closely resembles those encompassed by causes of action grounded on the manufacturers' failure to provide adequate warnings or sufficient information for the safe operation of aircraft. Such a resemblance is verified by DeVito v. United Airlines. Douglas Aircraft failed to advise pilots to use only a particular type of oxygen mask. Douglas was held liable for its failure to include the information in its operating manual. The CO₂ leakage in the cockpit, coupled with the use of the wrong mask, resulted in the accident. These common law duties, while overlapping regulatory duties in certain respects, cause additional concern.

III. COMMON LAW DUTIES OF MANUFACTURERS

The common law duties imposed upon aviation manufacturers stem entirely from the law of products liability. Three major theories support recovery against the manufacturer in the law of products liability: strict liability in tort, breach of express or implied warranty and negligence.

A. Strict Liability: Assembly of Associated Components

Strict liability in tort or warranty is almost universally available against manufacturers in cases involving liability assumed from the assembly of associated components. Once the manufacturer places an unsafe article into the stream of commerce and the condition creates an unreasonable risk of harm, then the manufacturer is generally held responsible for injuries or loss to the purchaser and any other persons within the foreseeable risk of danger. The authorities have accepted these doctrines, both as to general manufacturers and aviation manufacturers.

The extent of the general manufacturer's right of contribution from a component manufacturer is beyond the scope of this article. However, this can be extremely important in a strict liability action.

59 L. Kreindler, Aviation Accident Law § 6.01 (1963).
60 See 2 Frimer and Friedman, Products Liability § 16 (1970).
61 Kreindler, supra note 51, at § 7.03.
62 Id. at § 7.02.
64 Id. at 1020.
65 Id.
B. Negligence: Inadequate Information, Modification and Improvements, Negligent Inspection

Courts have not hesitated to hold manufacturers liable for failure to provide adequate information to the consumer.\(^9\) Liability may be predicated on failure to furnish information to the initial consumer or the failure to warn of discovered defects after the product has been marketed.\(^6\) The obligation of the manufacturer to modify and improve products that have already left its control or, alternatively, to warn of the need for such modification and improvement is another recent source of liability.\(^6\) These duties arise principally from negligence concepts, though there are notable academic advocates of the doctrine of strict liability in tort for failure to provide adequate information.\(^6\)

Negligence also plays a role in a cause of action against a general manufacturer for failure to adequately inspect a manufactured sub-component.\(^6\) The negligence causes of action will be considered together in a sampling of case law in the aviation litigation field.

In *Pan American World Airways v. United Aircraft Corp.*, United manufactured a propeller shaft used on the ill-fated aircraft. The propeller manufacturer was held liable for negligent design because the old propeller was known to be defective under the plaintiff's operating conditions.\(^6\) Nonetheless, the manufacturer did not notify users of the old appliance of the problems that were discovered. The Delaware Supreme Court relied heavily on the manufacturer's failure to notify the industry of the problems that might occur in the use of the old propeller shafts. Thus, Delaware recognizes a common law duty to make repair information available to the aircraft owners. The breach of that duty gives rise to a cause of action for negligence.

Perhaps the most celebrated consideration of manufacturers' obligation to modify and improve their product may be found in *Noel v. United Aircraft Corp.*.\(^6\) *Noel* upheld plaintiff's theory of negligence in an admiralty suit for wrongful death under the Death on the High Seas Act. Plaintiff alleged a continuing duty on the part of the seller to improve a propeller demonstrably prone to overspeeding. The manufacturer had successfully alleviated the overspeeding problem in a type of aircraft different than the one used by the *Noel* buyer. The technique was not made available to the owner of the aircraft. Because of the

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\(^{6}\) 1969 A.B.A. INSURANCE SECTION PROCEEDINGS 425.

\(^{6}\) 1970 A.B.A. INSURANCE SECTION PROCEEDINGS 343.


\(^{6}\) 192 A.2d at 916 (1963).

\(^{6}\) 342 F.2d 232 (3rd Cir. 1964).
availability of this technology, the knowledge of the dangers of the condition, and the failure to warn the purchaser of those conditions, the manufacturer was held responsible for the ensuing accident. Plaintiff's experts had testified that the propeller overspeeding caused the crash. Thus, Noel inaugurated the manufacturer's continuing duty to modify and improve his product. However, it was conceded that the duty could be discharged by notifying the consumer of the remedy for the unsafe condition.

A subsequent Second Circuit opinion in Braniff Airways, Inc. v. Curtiss Wright Corporation amplified Noel's concept of a manufacturer's continuing duty to improve and modify a given line of products. The airline and two passengers sued the airplane engine manufacturer for injuries sustained in a crash. The court recognized a jury issue presented by evidence that the cylinder wall in the engine was scuffed, that the manufacturer had changed the engine design and was aware of instances where the design change caused scuffing difficulties. The court upheld the duty to either remedy defects by redesigning or to warn current users of defects discovered after purchase. Based on this alleged duty, defendant manufacturer's directed verdict was reversed and the case remanded. Braniff Airways re-affirms the manufacturer's obligation to warn or redesign upon discovery of an unsafe condition.

Negligence has frequently been the basis for recovery in cases where latent defects remain undetected because manufacturers refuse to employ inspection and testing procedures within the industry's range of technology. Manufacturers are thus obliged not only to report or correct discovered defects but also to employ all reasonably available means of inspection to discover unsafe product features.

This portion of the article has examined the expanding concepts of products liability law as applied to aviation manufacturers. The final inquiry relates the regulatory duties imposed by the FAA on aviation and component manufacturers to those judicially imposed, and evaluates the increased prospects for ultimate recovery.

IV. THE ROLE OF THE REGULATIONS IN ESTABLISHING MANUFACTURERS' LIABILITY

It was noted at the outset that the regulations promulgated under the Federal Aviation Act of 1958, as amended, impose numerous statutory duties which are enforced by the imposition of civil penalties and admin-

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67 Id. at 235.
68 Id. at 236.
69 411 F.2d 451 (2d Cir. 1969).
70 Id.
istrative revocation of Type, Production or Airworthiness Certificates. The regulations may also serve to broaden the scope of manufacturers' duties in private civil litigation. These statutory duties affect the civil liability of aviation manufacturers in three respects. They may generate a new cause of action pursuant to the doctrine of implied civil remedies. A breach of these duties may also be held to be negligence per se or evidence of negligence.

A. Implication of a Civil Remedy

In the event that the manufacturer has failed to observe the FAA regulatory obligations which are intended to protect and benefit aircraft purchasers or operators, the manufacturer may be exposed to liability on the basis of directly implying a private federal civil remedy from this regulatory statute. The rationale that underlies the implied civil remedies dates back to common law England where penal statutes became vehicles for private recovery. Implying civil remedies theoretically increased the penal laws' deterrent effects.

The Federal Safety Appliance Act was the first regulatory statute used to imply a private civil remedy. That Act required railroads to maintain specified safety appliances. The failure to provide or maintain these features resulted in absolute liability to injured victims. To recover on the implied right of action, an injured person need only demonstrate that he was within the sphere of the Act's intended protection, that the Act was violated, and that the violation caused the injury.

The next and most extensive application of the implied civil remedy arose under the Securities Act of 1933 and Regulation X-10 B (5). The regulation forbids the use of the mails or interstate commerce to fraudulently sell securities.

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74 Id. at 246.
79 Id.
82 See Ellis v. Carter, 291 F.2d 270 (9th Cir. 1961).
Recently, the Fifth Circuit applied the implied civil remedies doctrine to the Labor Secretary's Regulation governing housing standards for migratory farm workers who are procured through the use of the United States Employment Service. The court held that the migratory farm workers were within the protection of the regulation and could thus sue to enforce it.

Recent litigants attempted to impose vicarious liability on aircraft owners by virtue of the definition of aircraft operator contained in the FAA Act. The Fifth Circuit rejected such an attempt, although other courts have seemed to hold otherwise. The statute's explicit limitation of the definition of owner "for purposes of this act only" was said to negative the implication of vicarious liability. Moreover, some courts have looked to §1506 of the Federal Aviation Act to conclude that no civil remedy may be implied, as that section expressly denies that the Act intended to alter or abridge common law remedies.

The primary utility of the implied civil remedies doctrine does not lie in dispensing with the degree of proof that is required by other liability theories. The implied civil remedy is primarily a jurisdictional device for obtaining federal jurisdiction over an otherwise intrastate claim. For example, if a given state has a wrongful death damage limitation, then federal jurisdiction and the development of "federal common law" become preferable. The private federal right of action for the enforcement of the aviation regulations may thus salvage plaintiff's otherwise limited recovery.

B. Negligence Per Se

The Civil Aeronautics Act of 1938, and its successors have consistently referred to the standards imposed by the aviation acts as safety standards. The Federal Aviation Regulations thus become useful in that proof of their violation may be argued as negligence per se in resulting litigation. Since these standards are intended to protect those most likely to be injured in aviation accidents, then all of the elements

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89 Two such statutes (Colorado and Massachusetts) are related: Marron v. Mustang Aviation, Inc., 430 S.W.2d 182 (Tex. 1968); Pearson v. Northeast Airlines, Inc., 309 F.2d 553 (2d Cir. 1962).
92 Neiswonger v. Goodyear Tire & Rubber Co., 35 F.2d 761 (6th Cir. 1929).
of a negligence per se argument are present. Furthermore, a violation of any of the express terms of the certificates, airworthiness directives, or other official guidelines constitutes a violation of the Act itself. Thus, no duty issue other than whether or not the regulations were violated need be determined by a jury.

The liability doctrine is potentially applicable to all of the previously discussed regulations, including the manufacturers' responsibility to provide information necessary to the safe operation and/or modification of aircraft already in use. The doctrine might similarly apply to the maintenance of inspection and quality control systems as well as the provision of pertinent information in flight manuals, or otherwise. A manufacturer's failure to report an occurrence to the FAA presents a closer question. The duty to report is owed to the FAA. However, the regulation arguably intends to provide prompt notification to the Administrator of unsafe conditions so that he might more swiftly remedy the conditions by issuing an airworthiness directive or the like. Thus, the breach of this reporting duty, it can be argued, ultimately amounts to a failure to warn the consumer. Liability in that situation is unquestionably more remote. But the problem is one of causation more than one of duty.

C. Negligence

The Safety Standards are at least admissible on the issue of negligence, even if they do not establish negligence per se. Closely related to the aviation litigation field is the venerable case of Neiswonger v. Goodyear Tire and Rubber Company. A low-flying dirigible caused damage to a farmer's livestock. The farmer-plaintiff recovered on a negligence theory that was supported by proof of the blimp's violation of federal altitude regulations. The converse use of the regulations was applied in Banko v. Continental Motors Corp. Defendant was there permitted to demonstrate its compliance with the regulations in inspection and testing to refute the allegations of negligence. This conclusion is not universally accepted, but Banko does indicate the varied utility of the regulations in civil litigation.

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83 Restatement (Second) of Torts, § 288B (1965).
85 See note 99 infra.
86 See notes 33, 34 supra.
87 See notes 39, 40 supra.
88 See notes 39, 40 supra.
89 35 F.2d 761 (N.D. Ohio 1929).
90 373 F.2d 314 (4th Cir. 1966).
CONCLUSION

The American aviation manufacturing industry is one of the most regulated, if not the most regulated industry, in the free world. Coupled with the evolution of products liability law, the scope of the initial and continuing responsibilities of manufacturers has been significantly broadened. Manufacturers owe a duty to warn, to provide initial information, to continue to provide information, to modify and improve a product or notify purchasers of the need for modifications and improvements. They must also inspect and test and maintain quality control to the limits of available technology. Regardless of the liability theory, the recently promulgated regulations that require manufacturers to distribute information to the consumer may have far-reaching effects on the manufacturers' ultimate liability for non-compliance. Whether the regulations are used to imply civil remedies for jurisdictional advantages, to ease the burden of proof in establishing negligence per se, or merely as evidence of negligence, they play a significant and expanding role in the outcome of private civil litigation involving general aviation manufacturers. That role is unlikely to diminish.