Aviation Product Liability of Component Part Manufacturer*

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บทคัดย่อ

วัตถุประสงค์ของบทความนี้คือตรวจสอบความรับผิดในผลิตภัณฑ์โดยผู้ผลิตชิ้นส่วนที่ใช้ในอุตสาหกรรมการบินซึ่งมีลักษณะเฉพาะ และควรต้องหาระบบความรับผิดที่เหมาะสมสำหรับผู้ผลิตชิ้นส่วนดังกล่าว การศึกษานี้จะใช้การศึกษาเปรียบเทียบและวิเคราะห์โดยเทียบลักษณะผู้ผลิตชิ้นส่วนที่ใช้ในอุตสาหกรรมการบินและผู้ผลิตอากาศยาน และวิเคราะห์กฎหมายความรับผิดในผลิตภัณฑ์ของประเทศสหรัฐอเมริกาและสหภาพยุโรป ผลการศึกษาแสดงว่าหลักความรับผิดโดยเคร่งครัดนั้นไม่เหมาะสมกับผู้ผลิตชิ้นส่วนในเรื่องการออกแบบที่บกพร่องและการเตือน ด้วยเหตุนี้ผู้ผลิตอากาศยานควรรับผิดแม้ว่าความเสียหายเกิดจากชิ้นส่วนที่บกพร่องก็ตาม

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Abstract

The objective of this paper was to examine the aviation product liability of component manufacturer, which has unique characteristic, and lok for an appropriate product liability regime for component manufacturer. The study will apply comparative and analysis approach by compare the characteristic of aviation component and aircraft manufacturer, and by analyse the product liability law in the US and the EU. The study indicated that the strict liability principle is inappropriate for component manufacturer in the area of design defect and warning defect. The aircraft manufacturer should bare the liability even the damage caused by the defective component.

Keyword:
aviation product liability, component manufacturer, product liability

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Introduction

"Safety first" is the best slogan for manufacturers. They should avoid any error in their products, because the accident causes the loss of money. The air accident causes the huge damages not only to the passengers or airline, but also the third parties. The sufferer can claim product liability against manufacturer if the accident caused by the defective product. The product liability can be defined as "the liability of a manufacturer, processor or non-manufacturing seller for injury to the person or property of a buyer or third party caused by a product which has been sold".[1]

It is important for the injured passenger or the relatives of deceased passenger to looking for a place where the limitations set in the Convention for the Unification of Certain Rules Relating to International Carriage by Air (the Warsaw Convention 1929)[2] or Convention for the Unification of Certain Rules for International Carriage by Air - Montreal (the Montreal Convention 1999)[3] do not apply.[4] When the air accident occurred the aircraft manufacturer become the main target for claiming compensation, because it has deep pocket characteristic. Because of there is no international law dealing with product liability, the aviation product liability governed by the national law.

One of the most significant developments in product liability in this century is the development of product liability in tort law of common law system, both in the United States and in the United Kingdom.[5] This product liability regime provides an alternative cause of action to an injured passenger in an aviation accident and more valuable than a claim against the air carrier under Montreal Convention, which limits the liability of the air carrier.[6]

The component manufacturers have been confronted with the dramatic increase of the product liability claims. For recovery the damage, plaintiffs have chance to sue greater number of defendants.[7] The component manufacturers have been the targets. However, it is inappropriate to treat the component manufacturer as same as the aircraft manufacturer, because they have difference in characteristic and relationship with the users.

This paper aims to examine the aviation product liability of component manufacturers, by analyse the positions and natures of component manufacturers under the United States and the European Union product liability regulations, based on comparative analysis. Because, the US and the EU has developed the sustainable product liability based on strict liability for the benefits of customers. Moreover, this paper also aims to look for the appropriate product liability regime for the component manufacturers, which affect to injured persons as less as possible.

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[1] Robert D Hursh and Henry J Bailey, *American Law of Products Liability* (Lawyers Co-operative Publishing Company 1974), at 3.

[2] Convention for the Unification of Certain Rules Relating to International Carriage by Air - Warsaw 1929, signed at Warsaw on 12th October 1929.

[3] Convention for the Unification of Certain Rules for International Carriage by Air - Montreal 1999, signed on 28 May 1999.

[4] Harvey M. Crush, 'Aviation Products Liability Law' (1982) 10 International Business Lawyer 73, at 73.

[5] Christopher Nyholm Shawcross and others, *Air law* (Butterworths London 2004).

[6] Ibid.

[7] Gerald C Sterns, 'IFR-The Liability of the Airframe and Component Manufacturer' (1978) 44 J Air L & Com 367, at 368.

Chapter 1 will demonstrate the general concepts of product liability based on the US and EU regulations and cases. Chapter 2 will examine the definition of defects of product under product liability regulation under the EU and US laws. Chapter 3 will demonstrate the limitation of product liability and defenses of component manufacturer in the US and the EU. Finally, Chapter 4 will suggest the appropriate product liability of component manufacturer.

1. The General Concept of Aviation Products Liability

In the aviation accident cases, manufacturers, dealers and all distributors of products, including component part manufacturers who provide component parts to be installed into the finished product by the aircraft manufacturer, shall be liable jointly and severally.[8] The component part manufacturer's liability could be based on negligence, warranty or strict liability in tort.

The Liability in Negligence[9]

In principle, the contract cannot expand its scope to place obligations on or grant enforceable rights to a third person who is not a party of contract under the privity of contract doctrine.[10] It means the manufacturer of defective products was responsible only to the primary purchasers, if the products were sold to the third parties, who suffered from the defect of products, the privity theory prohibits the claim of third parties to the manufacturer.[11] The products liability law in almost countries has been developed to provide more advantages to claimant by revising their products liability law to allow the third party beneficiary to claim his rights.[12]

In 1916, the originative products liability case in the US was introduced, namely, *MacPherson* v. *Buick Motor Co case.*[13] MacPherson did not buy a car directly from manufacturer, but from a retailer. He injured in the car accident caused by a defective wheel, so he sued the manufacturer for damage.[14] The court found that plaintiff had a cause of action to sue the manufacturer even though he did not directly bought the automobile from the manufacturer. Because, the characteristic of defective product contains inherent danger to its users, and the manufacturer could have foreseen that the product will be used by someone other than primary purchaser, then the manufacturer should be liable to all injuries and damages caused by its defective product. Furthermore, the court also stressed that in the case that damages caused by the defective product, the society's interests can only be protected by eliminating the theory of privity of contract between the manufacturer, the dealer and the reasonably expected ultimate consumer.[15]

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[8] Council Directive of 25 July 1985 on the Approximation of the Laws, Regulations and Administrative Provisions of the Member States Concerning Liability for Defective Products (hereafter 'the EC Directive'), at Article 5.

[9] The negligence can be defined as any action that does not meet the legal standard, which aims to protect other persons from unreasonable risk or harm, except for international conduct, or put simply, culpable carelessness. See also *M'Alister (Donoghue) v. Stevenson* [1932] AC 562 HL.

[10] Hugh Collins, *The Law of Contract* (4th edn, Cambridge University Press 2003), at302.

[11] Jerry Kirkpatrick, 'Product Liability Law: From Negligence to Strict Liability in the US' [2009] Business Law Review 48, at 48.

[12] Such as the United States and European countries.

[13] *MacPherson v. Buick Motor Co.* [1916] 217 NW 328, 111 NE 1050.

[14] Ibid.

[15] Ibid.

In 1932, the UK court established a landmark case on product liability – *M'Alister (or Donoghue)* v. *Stevenson*[16], known as 'the snail in the bottle' case. In this case, notwithstanding plaintiffs could accomplish to shift the burden of proof to the manufacturer either by providing adequate surrounding circumstantial evidences or counting upon the theory '*res ipsa loquitur*'[17] in the rules of evidence, '*res ipsa loquitur'* will be available only if the plaintiff could prove that the accident or damage occurred in such way because the negligence of the defendant.[18]

As same as other manufacturers, aviation component part manufacturers may be negligent if they: 1) negligently manufacture a particular product that causes damages to the plaintiff;[19] 2) negligently design a whole product line;[20] or 3) fail to provide sufficient instructions or warnings by negligence.[21]

The liability in negligence based on fault of manufacturer. Therefore, to invoke the liability in negligent, the plaintiff must prove that:

1. the defendant has a duty of care to the claimant;
2. that duty was breached;
3. there is an adequate causal link; and
4. the damage suffered by the plaintiff.[22]

However these decisions provided a little better protection to third parties, but burden of proof is a burdensome pressure on the claimant in the claim for damage caused aviation product because it is a high technology and complicated industry.

The Liability in Warranty

[16] *M'Alister (Donoghue) v. Stevenson*. The plaintiff found a snail in the bottle of ginger beer, so she sued ginger beer manufacturer for compensation. It was proved that the snail was put into the bottle at the time it was manufactured, so the manufacturer was negligence and liable for damages of plaintiff. In *M'Alister (Donoghue)* v. *Stevenson*, the court noted that: "A manufacturer of products which he sells in such a form as to show that he intends them to reach the ultimate consumer in the form in which they left him with no reasonable possibility of intermediate the preparation of putting up of the products owes a duty to the consumer to take that reasonable care".

[17] '*Res ipsa loquitur'* may be applied in some circumstances to draw the implication that the manufacturer was negligence in the aircraft manufacturing, or applied in a negligence action for an unknown in aircraft. See more at Gregory P Wells, 'General Aviation Accident Liability Standards: Why the Fuss' (1990) 56 J Air L & Com 895, at 904.

[18] Jean Michel Fobe, *Aviation Products Liability and Insurance in the EU* (Kluwer Law and Taxation Publishers 1994), at 104.

[19] *Carter Carburetor Corp. v. Riley* [1951] 186 F 2d 148 Court of Appeals, 8th Circuit (Component part manufacturer's negligence in manufacturing of the fuel pump was proximate cause of crash).

[20] *Pan American World Airways v. United Aircraft Corp* [1963] 192 A 2d 913 Del: Superior Court (the component part manufacturer negligently designed the governor caused the aircraft damage).

[21] *Noel v. United Aircraft Corporation* [1964] 342 F 2d 232 Court of Appeals, 3rd Circuit (the propeller manufacturer failed to warn users about the defects in propeller system).

[22] Fobe, at 87.

The manufacturer's liability for the damages caused by its defective products usually based on warranty.[23] The warranty closely relates to contract, so it also has the privity of contract. The warranty may be in the form of written or oral statement, made by manufacturers or vendors of products to guarantee that the quality of products meets certain standards.

Under the US regulation, the court ruled that implied warranty assures that the product must be fit and safe for its intended use. In *Henningsen* v. *Bloomgield Motors, Inc.,*[24] the court stated it was unfair to create demand of buyer with implied warranties found on the advertising, but limits the manufacturer's liability with a very restrictive express warranty. Moreover, the court also noted that an implied warranty of commercial products from either the manufacturer or the dealer, extend to the purchaser, his family, and to other persons who owning or using it with his consent.[25]

For the aviation products, the aircraft manufacturers are obligated to make sure that the aircrafts pass the qualification of airworthiness, which is a legal requirement under aircraft certification measures. The certification of airworthiness implicitly transform into an express warranty. In addition, the express warranty may have been found in advertisements and booklets created to attract customers to buy a certain aircraft or component part, as well as from communications between customers and sales agents.[26] To invoke a warranty claim, the plaintiff must prove:

1) the existence of a warranty,
2) a breach, and
3) a causal link between the breach and the damage.[27]

The component manufacturers may not be liable to injured passengers or far purchaser for breach of warranty.[28] In *Goldberg* v. *Kollsman Instrument Corp.,*[29] the court held that the component part manufacturer was not liable for the breach of implied warranty, because it is unnecessary to extend the rules of liability to component part manufacturer. In this case, the aircraft manufacturer

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[23] Under Black's law dictionary, warranty is "an express or implied promise that something in furtherance of the contract is guaranteed by one of the contracting parties; esp., a seller's promise that the thing being sold as represented or promised". Look at BA Garner (ed) *Black's Law Dictionary* (7th edn, West Group St. Paul Minn 1999).

[24] *Henningsen v. Bloomfield Motors, Inc.* [1960] 32 NJ 358, 161 A2d 69. The car slipped out of the road after it was bought only 10 days. The accident caused the injury to the buyer's wife, who was the driver. The plaintiff sued the manufacturer because it is impossible for the accident if there was no defect in the car. In addition, the manufacturer released the extensive advertising programs of their products to attract the buyer, but limited its liability by written warranty.

[25] David W. Okey, 'Products Liability and Uprating of Electronic Components' (1998) 64 J Air L & Com 1201, at 1215. If the product contains a defect, and it breaches this implied warranty. Hence, the responsibility under implied warranty expands to all users, regardless whether they have a contract or privity with the manufacturer.

[26] Victor E Schwartz, Patrick W Lee and Rochelle M Gunner, 'Product Liability of the Aviation Component Part Manufacturer: A Proposal to Reduce Transaction Costs' (1984) 13 Transp LJ 393, at 402.

[27] Uros Alexander Kosenina, 'Aviation Product Liability' (LLM Thesis, Leiden University 2013), at 10.

[28] Schwartz, Lee and Gunner, at 403.

[29] *Goldberg v. Kolsman Instrument Corp.* [1963] 240 NYS2d 592.

provided the airline's passengers adequate protection.[30] However, the component part manufacturer may still be liable for breach of warranty if the plaintiff cannot claim from aircraft manufacturer.[31]

The strict liability in both express and implied warranties provides huge advantages to the purchaser and innocent persons who injured by the defective product, [32] particularly the converting of the commercial warranty into express warranties. In the market of high technology and complicated products, the express warranties are important in contract, such as the purchase of used aircraft contract.[33]

The Strict Liability in Tort

The US courts have shifted from the negligence to more favorable concept for customer, so-called 'strict liability'. The main reason is to provide fairer treatment for customers to claim against manufacturers.[34] Under the negligence claim, the claimant has a weaker position mainly because of the difficult burden to prove the negligent conduct of manufacturers, particularly in the aviation product industry, which contains the high technological and complicated natures.[35]

The strict liability is the liability based on no-fault basis, it applies if a product caused the injury to plaintiff and the defendant is in the business of selling such product, regardless whether or not the manufacturer or retailer was negligent.[36] The burden of proof was shifted from the claimant to the product manufacturer.[37] Furthermore, if the damage caused by negligence action, the liability in tort extends the rights of the plaintiff to sue non-contractual parties, such as component part of manufacturers.[38]

Currently, almost all states apply strict liability in tort in their own national law. For example, the US have adopted strict liability in tort and embodied it in Section 402A of the Restatement (Second) of Torts.[39] For the EU Member states, they must implement the strict liability in tort doctrine in their national law in accordance with the EC Product Liability Directive of 1985 (hereafter 'EC Directive').[40]

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[30] Schwartz, Lee and Gunner, at 404.

[31] *Sevits v. McKiernan-Terry Corporation* [1966] 246 F Supp 810 Dist. Court, SD New York.

[32] P.P.C. Haanappel, 'Product Liability in Space Law' (1979) 2 Hous J Int'l L, at 59.

[33] Lazar Vrbaski, 'Liability for Defective Aviation Porducts: Aircraft Manufacturing and the Challenges of Ensuring Safety in the Sky' (LLM Thesis, Leiden University 2012), at 16.

[34] Fobe, at 88.

[35] Kosenina, at 16.

[36] Restatement (Second) of Torts (1965), at Section 402A.

[37] Kosenina, at 17.

[38] Paul B. Larsen, Joseph C. Sweeney and John Gillick, *Aviation Law: Cases, Laws and Related Sources* (Martinus Nijhoff Publishers 2012), at 611. See also EC Directive 85/374/EEC, at Article 3. See also Restatement (Second) of Torts (1965), at section 402A.

[39] Restatement (Second) of Torts (1965), at Section 402A.

[40] EC Directive 85/374/EEC.

The strict liability in tort first became available in *Greenman* v. *Yuba Power Prods, Inc.*[41] in 1963. The Supreme Court held that the liability of the manufacturer on its defective products was not governed by the rule of contract warranty, but by the law of strict liability in tort.[42] Furthermore, the Chief Justice Traynor also provided the definition of strict liability in his opinion for the court:

"A manufacturer is strictly liable in tort when an article he places on the market, knowing that it is to be used without inspection for defects, proves to have a defect that causes injury to a human being."[43]

In contrast to the negligence case, the claimant needs to prove only three elements for summoning the strict liability:

1. the existence of a defect;
2. that defect existed at the time the product left the control of manufacturer; and
3. that defect caused the injury or damage to the plaintiff.

The key result of *Greenman case* is that the ultimate consumer is now protected. The products liability is not limited by the privity of contract, or the limitation under the express warranty from the manufacturer or retailer.[44] The claimant can claim his rights under the principle of negligence, warranty or the strict liability in tort against the manufacturer of defective products.

Strict liability assures that the risks of harm from defective product will be borne by persons who are in the best position. Additionally, strict liability pushes a heavy pressure to manufacturer to produce safer products. Furthermore, strict liability removes the requirement of proving negligence, which is the huge obstacle to plaintiff.[45]

2. What is the Defective Products?

The product liability in almost states require the claimant to prove the defect of product that caused the damages. In the EU, the notion of defectiveness can be found in Article 6(1) of the EC Product Liability Directive.[46] The product is defective 'when it does not provide the safety which a person is entitled to expect taking all the circumstances into account'.[47] The factors that could be taken into account including the presentation of the product, the reasonable expected function of product, and the time when the product was put into circulation. Furthermore, Article 6 makes clear that the determination of defective product should not only based on the reason that a better product is subsequently placed into circulation.[48]

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[41] *Greenman v. Yuba Power Products, Inc* [1963] 59 Cal 2d LA No 26976 Cal: Supreme Court. In the first trial, the court believed that the liability of manufacturer based on the breach of express warranty and negligence, and the liability of retailer based on the breach of implied warranty. The Supreme Court disagreed with those causes of action.

[42] Ibid, at 901.

[43] Fobe, at 88.

[44] Okey, at 1217.

[45] Schwartz, Lee and Gunner, at 406. See also *Greenman v. Yuba Power Products, Inc*.

[46] EC Directive 85/374/EEC.

[47] Ibid, at Article 6(1).

[48] Ibid, at Article 6(2).

The definition of defective product in the US can be found in the case laws and the Restatement (Third) of Torts,[49] which adopts a risk-utility balancing test to determine the defectiveness in design of the products. There are three kinds to consider a product is in defective condition: manufacturing defect, design defect, and failure to warn.

a) Manufacturing Defects

Manufacturing defect is a failure of a particular product or component part of a product to perform its intended function as the other products in the same production line, although there is no error in preparation or marketing process.[50]

b) Design Defects

The product will be defective in design when the foreseeable risks of harm caused by the product can be diminished or evaded by applying a reasonable alternative design, and the disregard of such alternative design makes the product not reasonably safe.[51]

Generally, the aviation component part manufacturers produce their product following to specifications from the aircraft manufacturers in the case of commercial aircraft, or from the government in the case of military aircraft. It seems unfair for component part manufacturers if they must be liable to the damages caused by defects on an aircraft, which resulted from defective design created by a third party. Therefore, the component part manufacturer will be exonerated from negligence liability if the product was manufactured in accordance with specifications created by others, except the manufacturer knew or should have known about the defect in the design.[52] This principle based on the premise that the developer of specification design is in the better position than component part manufacturer to recognize the risks in product design and to provide safety quality into the product.

Moreover, because of the component part manufacturer regularly lack of expertise and information concerning to the use of the component part, and circumstance in which the component part will function. This lacking limits the ability of component part manufacturer to foresee potential dangers and install proper safety system.[53] Therefore, the courts in *Shawver* v. *Roberts Corp.*[54] and *Shanks* v. *A.F.E. Industries,*[55] held that it is reasonable to place liability upon the assembler because he has greater expertise in end-use of product, his intimacy with the circumstance in which the component part will operate, and he has better capability to foresee the risks and to avoid them.

c) Failure to Warn

The manufacturer will be liable on their product for the failure of warning when it provided insufficient instruction or warning when the sufficient instruction or warning can reduce or avoid the

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[49] Restatement (Third) of Torts: Products Liability (1998), at Section 2.

[50] Ibid, at § 2.

[51] Ibid.

[52] Schwartz, Lee and Gunner, at 408. See also *Orion Ins. Co., Ltd. v. United Technologies Corp* [1980] 502 F Supp 173 Dist. Court, ED Pennsylvania.

[53] Schwartz, Lee and Gunner, at 413.

[54] *Shawver v. Roberts Corp* [1979] 280 NW 2d 226 Wis: Supreme Court.

[55] *Shanks v. AFE Industries, Inc* [1981] 416 NE 2d 833 Ind: Supreme Court.

foreseeable risks of harm caused by the product, and the disregard of the sufficient instruction or warning makes the product not reasonably safe.[56] The manufacturer has an obligation to provide adequate instruction or warning concerning the use of product not only when it sales the product, but also after the product was sold.

It is obvious that the strict liabilty is inappropriate to the component part manufacturer in the failure to warn. Because, the principle of strict liability based on the knowledge, expertise, technology, the ability to foresee the risks of product and the communication with the user, but the component part manufacturer position in the contribution chain is almost the last, which prevents them from contacting with the users. For this reason, the courts often exonerate the component part manufacturer from the warning liability claim.[57]

In contrast with the assemblers, the component part manufacturers are normally unfamiliar with the circumstance of the use of their product, as well as they are unfamiliar with the association of their component and others in the assembly. Thus, it is impossible for them to foresee the risks, which may arise from the association of their component with other parts in the function circumstance. The US courts have been reaffirmed these knowledge limitation of component part manufacturer in *Orion Insurance Co.* v. *United Technologies Corp.*[58]

Furthermore, component manufacturers regularly lack of contact with anyone except their direct purchasers, while the finished product manufacturers generally sell their products in their own packaging, which they can supply appropriate instructions or warnings in the form of label.[59] Therefore, it is unreasonable to impose far-reach warning obligations on the component part manufacturer when the aircraft manufacturer has better positions in both the information and the effective communication for warning to the product users.

The strict liability should not be applied to component manufacturers in the design defects and failure to warn, because they are not in the proper position to take those responsibilities.

3. Limitations and Defenses

After the strict liability regime was introduced in the *Greenman* case[60], the concept has been widely applied in the US. Tort law. However, the huge increasing of the aviation product liability litigation in the US pushes the small aircraft manufacturers to a danger position.[61] Hence, as the reaction to the downfall of aviation industry, the General Aviation Revitalization Act was legislated in 1994 (hereafter 'GARA').[62] The main purpose of GARA is to relieve the liability of the manufacturers

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[56] Restatement (Third) of Torts: Products Liability (1998), at Section 2(c).

[57] Schwartz, Lee and Gunner, at 414.

[58] *Orion Ins. Co., Ltd. v. United Technologies Corp*. The court held that the Amtel, component part maker, was not liable for failure to warn United Technologies for defects in design specifications developed by Sikorsky division of United Technologies. The court noted that Sikorsky was an expert in the aviation field, not Amtel. Therefore, there was no reason for Amtel to know or should have known these defects

[59] Schwartz, Lee and Gunner, at 417.

[60] *Greenman v. Yuba Power Products, Inc*.

[61] Nathan J Rice, 'General Aviation Revitalization Act of 1994: A Ten-Year Retrospective, The' [2004] Wis L Rev 945, at 946.

[62] Ibid, at 946.

and support the domestic general aviation product industry by imposing statutes of repose. In the Europe, the EC Directive also imposes the limitation periods of claims and the minimal amount of product liability.[63]

Limitation of Liability

GARA provides immunity from no-limit liability period to the general aircraft manufacturer by imposing a time limit of repose at 18 years after the aircraft is delivered directly from manufacturer to its first lessee or purchaser[64], or after the aircraft is delivered to the person who takes part in business of selling or leasing of that aircraft.[65] For the component part, GARA also set the time limit for claim at 18 years beginning on the date the new component completely replaced or added in the aircraft.[66]

The EC Directive created the limitation period at 3 years, which begin at the date that the plaintiff became aware or should reasonably have become aware of the damage, the defect and the identity of the producer,[67] or 10 years after the product itself is first put into circulation.[68]

This time limit is the limitation for strict liability claim. The strict liability does not replace or prevail over other causes of action, such as under contract or fault. Thus, if strict liability claims expire or repose, the plaintiff may claim under other available causes of action.[69]

Moreover, the EC Directive also allow the member states to impose the limitation amount of liability in their national law, but it must be not less than 70 million ECU[70] (euro).[71]

Comparing GARA and EC Directive, the EC Directive provides better limitation for aviation product manufacturers than GARA does, both in the limitation of time and amount of liability. Moreover, the regulations of GARA are not applicable for large aircraft such as a Boeing 747.[72]

Defenses of Component Manufacturer

In the US, The Restatement (Third) is perhaps the best defense for component part manufacturers, by arguing that they should not be liable when their component products are not defective.[73] The liability should be limited only to the case that the component parts themselves are defective, or the component part manufacturer considerably takes part in the integration of component part into the design of finished products.[74]

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[63] EC Directive 85/374/EEC, at Article 10, 11 and 16.

[64] General Aviation Revitalization Act of 1994, at Section 2(a)(1)(A).

[65] Ibid, at Section 2(a)(1)(B).

[66] Ibid, at Section 2(a)(2).

[67] EC Directive 85/374/EEC, at Article 10(1).

[68] Ibid, at Article 11.

[69] Fobe, at 54.

[70] ECU (European Currency Unit) was replaced by the euro on 1st January 1999, see more at European_Commission, 'Glossary: European currency unit (ECU)' (*Eurostat*, 20 October 2014) <http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:European_currency_unit_(ECU)> accessed 20 October 2014.

[71] EC Directive 85/374/EEC, at Article 16.

[72] The GARA only applies to small aircraft and helicopter. See also General Aviation Revitalization Act of 1994, at Section 2(c).

[73] Restatement (Third) of Torts: Products Liability (1998), at Section 5.

[74] Okey, at 1229. See also Restatement (Third) of Torts: Products Liability (1998), at Section 5.

Under Article 7 of the EC Directive,[75] the component manufacturer can invoke that: the defect did not exist when the product was put into circulation;[76] the state of scientific and technical knowledge at the time when the product was put into circulation was not such as to enable the existence of the defect to be discovered;[77] or the defect in component resulted from the product design which the component has been fitted or to the instruction provided by finished product manufacturer.[78]

Moreover, under Article 8(2) of EC Directive, the liability of manufacturer may be reduce or disallowed if he can prove that the damage cause by both the product defect and the fault of injured parties or persons in responsibility of injured parties,[79] but this is not extended to the act or omission of third parties.[80]

Both US and EU regulations, provide protection to the component manufacturers in case that they did not involve in design of component, but the EU Directive provides various and clearer defenses for manufacturer.

4. The Appropriate Product liability for the Component Part Manufacturer

According to the unique position of component manufacturer in the distribution line, the product liability of component manufacturer concerning to the defective design or warning case should be examined by a negligence basis, particularly in the aviation industry, which contains high technological and complicated natures. The aviation component part manufacturer cannot be expected to has ability to foresee the dangers in product and provide the crucial conduct to prevent the danger.

In my point of view, it is better to separate the component part manufacturers from not only the strict product liability, but also the product liability case between the injured persons and manufacturer. Because, they are not stand in the strong position to be liable as we can expect from the finished product manufacturers. Moreover, according to the nature of component part, particularly the aviation product, such as aircraft engine, which is frequently removed, reinstalled from aircraft-to-aircraft by airline. Therefore, it is very difficult for the plaintiff to prove the existence of defect at the time component part left the control of manufacturer. It is unfair to impose liability on the component part manufacturer if the evidence is inadequate to establish the responsibility of manufacturer on the defect.[81]

In the aviation accident case, the aircraft manufacturer should bear responsibility to all damages caused by defects in the aircraft, even the damages caused by the component part defects. Because, the aircraft manufacturer has a deeper pocket and also stronger position compare with the

[75] EC Directive 85/374/EEC, at Article 7.

[76] Ibid, at Article 7(ii).

[77] Ibid, at Article 7(v).

[78] Ibid, at Article 7(vi).

[79] Ibid, at Article 8(2).

[80] Ibid, at Article 8(1).

[81] *Rossignol v. Danbury School of Aeronautics, Inc* [1967] 154 Conn 549 Supreme Court.

small component part manufacturers, e.g. tyres or hydraulic system manufacturers, to prove the defenses against the claim.

Furthermore, the strict liability basis should not apply to the cases between the commercial parties who have equal bargaining power,[82] because they have the stronger position compare with the injured customers. They can access to the evidence easily because of the expertise or technologies in their hands for determining the actual cause of the accident and for proving the negligence of the opposing parties. The aircraft manufacturer can claims the compensation, which they paid to injured plaintiffs, from the component part manufacturer easily if the damage caused by the defects of component part. They can sue the component manufacturer under the contract law and the tort law, which is simple for them to prove the negligence of component part manufacturer in manufacturing, design or warning.

Conclusion

Currently, in the aviation product liability case, plaintiff can sue all parties who involved in distribution of the aircraft, including producer of aircraft and component. The component must be jointly and severally liable for the damage from defective product. The product liability concepts in the US and the EU have been developed into the strict liability, which is based on no-fault basis, to support the customer. Although the plaintiff may have several causes of action, he/she generally prefers the strict liability. Because, the burden of proof is moved to the manufacturer, the plaintiff must prove that the defect exists when the product left the control of manufacturer, and the defect caused the injury to the plaintiff. However, the plaintiffs usually fail to prove the existence of defect when the component part left the control of manufacturer because of the nature of component parts, which is always removed or reinstalled by airline.

In the US, the liability of aviation component manufacturer is limited at 18 years after the new component was completely replaced the old one. On the other hand, in the EU, the strict liability repose at 3 years after the plaintiff became aware or should reasonably have become aware the damage, the defect, and the producer, or at 10 years after the component is first put into circulation.

Moreover, the strict liability will apply to the component manufacturer when the damage caused by the product that contains defect in manufacturing, design, or warning. However, the strict liability is not appropriate for the component part defect in design and warning areas. It is unfair to treat the component manufacturer as same as the aircraft manufacturer because they have different capacity. The component manufacturer lacks of ability to foresee the risk and provide safer device in product. Besides, it also lacks of ability to provide adequate instructions or warning to the users because of its position in the distribution line, which is far away from the end-use of product and the users. Therefore, the aircraft manufacturers are always in the best position to provide proper design of product and sufficient warnings to the users.

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[82] Fobe, at 89. See also at *Tokio Marine & Fire Ins. v. McDonnell Douglas Corp* [1980] 617 F 2d 936 Court of Appeals, 2nd Circuit (the court held that the strict liability principle will not be applied in a case where the sales contract was made between two large corporations under the equal strength).

Consequently, the component manufacturer is not in the proper position for the strict liability claims. The aircraft manufacturer should bear the strict product liability even the damage caused by the defective component, because it was in the best position to provide recovery to the sufferers. It has a deep pocket for compensation; expertise and technologies for discover and resolve the danger; and the communication opportunity to provide the warning to the users.

If the accident occurred from the defect in component, the aircraft manufacturer should claim compensation from component manufacture under the negligence. The strict liability should not apply between them, because the proof of negligence of component manufacturer is not too difficult for the aircraft manufacturer, who has expertise and technologies