

航空宇宙政策·法學會誌 第31卷 第2號
2016년 12월 30일 발행, pp. 99~143

논문접수일 2016. 12. 06
논문심사일 2016. 12. 20
게재확정일 2016. 12. 28

Some Issues on China General Aviation Legislation

Luan Shuang*

Contents

- I. Introduction
- II. Establish a Scientific Legislation Concept
- III. Specify Basic Legislative Principles
- IV. Construct a Unified Legislative System
- V. Conclusion

* Director, Air Law and Space Law Institute. Professor, School of Law, Nanjing University of Aeronautics and Astronautics in China.

I . Introduction

According to article 145 of Civil Aviation Law of the People's Republic of China, general aviation means civil aviation operations other than public air transport with civil aircraft, including aerial work in the fields of industry, agriculture, forestry, fishery and building industry, and flight operations in the fields of medical and health work, emergency and disaster relief, meteorological service, ocean monitoring, scientific experiment, education and training, culture and sports.¹⁾ Article 3 of Rules of General Aviation Flight Control in 2003 has made a more detailed regulation that the aerial work excluding military, police, customs anti-smuggling and public air transportation flights, general aviation means flight operations in the fields of industry, agriculture, forestry, fishery, mining industry and construction industry, and aerial works in medicare, emergency and disaster releasing, meteorological detection, ocean detection, scientific experiment, remote sensing survey and mapping, educational training, culture and sports, tour and sightseeing and so on.²⁾

The General Operation and Flight Rules (CCAR-91-R1) in 2007 has divided civil aviation into public transportation aviation, general aviation and aerial operations. Taking operator as a criteria, general aviation enterprises are separated into commercial non-transport operators and private large-scale aircraft operators and aircraft managing agents. In the aspect of services, general aviation is combined with general commercial flights, training flights, air tour, flight operations of agricultural and forestry spraying, out- rotorcraft load flight operations and so on. Ultra-light aircraft is defined as small-sized aircraft which is operated by only one

1) 中華人民共和國民用航空法》第145條，通用航空是指使用民用航空器從事公共航空運輸以外的民用航空活動，包括從事工業、農業、林業、漁業和建築業的作業飛行以及醫療衛生、搶險救災、氣象探測、海洋監測、科學實驗、教育訓練、文化體育等方面的飛行活動。

2) 通用航空飛行管制條例》第3條，是指除軍事、警務、海關緝私飛行和公共航空運輸飛行以外的航空活動，包括從事工業、農業、林業、漁業、礦業、建築業的作業飛行和醫療衛生、搶險救災、氣象探測、海洋檢測、科學實驗、遙感測繪、教育訓練、文化體育、旅遊觀光等方面的飛行活動。

man and only used for entertainment and sports, and needs no airworthiness certificates.³⁾

In 1912, 9 years after Wright brothers created an airplane, Chinese first aircraft designer Ru Fen created a biplane with a liquid-cooled engine.⁴⁾ More than a century has passed since then. At present, the development of Chinese general aviation is not satisfying owing to multiple reasons.⁵⁾ However, economic transition and structural adjustment provide an unprecedented wide market space for Chinese general aviation. Above all, China keeps on releasing relative policy signals for developing general aviation. Some significant policies concerning about low-altitude airspace management reformation are ready to be introduced.⁶⁾ The prospect of general aviation is promising.⁷⁾ To develop this industry, we need the support of laws and regulations. Undoubtedly, the current situation of Chinese general aviation laws cannot meet the realistic demands. As a result, researching legislative problems of Chinese general aviation is indeed pressing.

II. Establish a Scientific Legislation Concept

2.1. Promoting the development of Chinese aviation industry

The general aviation industry with a reputation of “Flower of Industry” breeds tremendous investment opportunities.⁸⁾ It plays an indispensable role in various

3) 《一般運行和飛行規則》(CCAR-91-R1)把民用航空分爲三部分:公共運輸航空、通用航空及航空作業,以運營人爲標準,將通航企業劃分爲商業非運輸運營人及私用大型航空器運營人、航空器代管人,從業務上分爲一般商業飛行、訓練飛行、空中游覽、農林噴洒作業飛行、旋翼機機外載荷作業飛行等,對於超輕型飛行器的運行要求,定義爲由單人駕駛、僅用于娛樂或體育活動、不需要任何适航証的小型空中飛行器具。

4) http://tech.gmw.cn/scientist/2015-09/21/content_17108410.htm

5) <http://news.carnoc.com/list/339/339837.html>

6) <http://news.cctv.com/financial/20070125/109850>.

7) <http://news.sina.com.cn/o/2015-12-02/doc-ifxmhqaa9767216.shtml>

fields including agriculture, forestry, industry, exploration, meteorology, earthquake rescue and sports. The industrial chain of Chinese general aviation extends its scope to various services including aircraft manufacturing, airport construction, educational training, ground maintenance and insurance. The input-output of general aviation industry is higher than that of other industries.⁹⁾ As a result, the general aviation will serve as a Chinese emerging industry that boosts domestic demand, promotes employment and expedite domestic economic development.¹⁰⁾

A fine legislation can provide a favorable legislative environment for the development of Chinese general aviation and play the role of guarantee and promotion. At present, the relative laws and regulations remain at the principle level and cannot meet the requirements of the industrial rapid growth, or even restrict its growth to some extent. A task of top priority is that we should, based on both the concept of promoting the industrial development of general aviation and national industrial planning, enact and rectify relative laws and regulations. And we should also straighten out the relationship between aviation security and industrial development and promote the revolution of low-altitude airspace management in an all-round way, in order to improve the utilization rate of airspace resources, classify and establish airspace, simplify examination and approval procedure and intensify operation management.

In addition, what we should do is to expedite the infrastructure layout construction, guide the differentiated but coordinated development of general aviation industries in various areas, establish a united supervision mechanism of general aviation, redistrict the responsibilities of Chinese Air Control Agency and set up legislation, law enforcement and judicial systems with clarified institutions, clear positioning and classified responsibilities, so as to usher in a new era of the legislative management of Chinese general aviation industry.¹¹⁾

8) <http://news.carnoc.com/list/232/232580.html>

9) <http://news.carnoc.com/list/302/302947.html>

10) <http://news.163.com/14/1230/17/AENSUK4P00014AEE.html>

11) Luan Shuang, "Some Issues and Countermeasures on China General Aviation Legislation", (unpublished paper), at 12. (Notes prepared for the Seminar at 中國國際通用航空大會 on 17 October 2015).

Intensify the legislative construction of supporting measures of the general aviation industrial chain, arrange construction specifications of general aviation airports, promote the investment and construction of supporting measures of general aviation airports, enact charging standards of general airports adjusted with general aviation development level and establish the cultivation and flow mechanism of professional technicians.

The most important factor of developing Chinese general aviation is to accelerate infrastructure construction, namely accelerating the construction of general aviation airports. At present, there are 2800 counties in China, while the number of real general aviation airports is only 78. In USA, there are more than 19700 airports of various kinds and the number of general airports is over 1500.¹²⁾ We should promote the acceleration of the relative infrastructure construction in various areas, develop and improve relative policies and regulations supported in the form of local regulations.

The development of general aviation definitely should absorb multiple capital including non-governmental capital.

The injection of non-governmental capital will vigorously expedite the development of Chinese general aviation. According to statistics, as of December in 2014, non-governmental enterprises account for over 80% of Chinese total 239 general aviation enterprises.¹³⁾ Currently, lots of non-governmental enterprises cooperate with local governments to construct general aviation airports or construct taking-off and landing points for general aviation airports across the country. It is recommended to encourage multiple capital to invest in general aviation industry by means of legislation.

12) <http://www.ethcy.com/htmls/info/2010515401.html>

13) <http://www.sirenji.com/article/201503/69164.html>

2.2. Shifting the Focus from Regulations to both Regulations and Services

Considering the particularity of the general aviation, this industrial legislation should take into account both regulation and service functions. In this respect, many of the American practices are worth using for reference. The Federal Aviation Administration (FAA) is the US general aviation administrative institution, affiliated with the US Federal Ministry of Transportation. The main task of FAA is to guarantee the flight safety of civil aviation and promote the development of civil aviation. Without any administrative license and market supervision function, the FAA indirectly operates civil aviation enterprises and is a pure operation and security management institutions. The FAA unswervingly insists on the principle of combining lenience and severeness in terms of industrial supervision. With regard to operation and security, the FAA puts the strict supervision into practice: firstly, it implements air traffic control according to *the Federal Aviation Regulation*, and conducts security training to ensure the transportation security. Secondly, it issues the type certificate, production license and airworthiness certificate to the general aviation products.

Thirdly, it conducts periodic inspection to airports and other kinds of aviation facilities and issues certification to them. Fourthly, it supervises, controls and manages the general aviation maintenance and ground maintenance. In terms of administrative permission and market supervision, it adopts a prudent policy.¹⁴⁾ The FAA considers that excessive administrative permission and market supervision may restrict the development of general aviation industry.

The key is to find the balance between the government and market, making supervision promote and guarantee the healthy operation of the general aviation industry. The America possesses comprehensive laws and standards of general

14) Gao Qiming: Analysis & Inspiration of the Development Experience of US General Aviation Industry, Journal of Xi'an Aeronautical University, 2013/6.

aviation management. As a result, there exist few governmental permissions and the market is mainly regulated by laws. In America, the general aviation flight does not need be permitted and put on records. All civil airports are open to the public free of charge except refueling charges. The operating cost of US general aviation is very low.

Thus it can be seen that the American legislation of general aviation plays the role of regulation and effectively fulfills the service function.

With regard to the legislative ideas, we should place equal importance to regulations and services, reducing administrative licensing and market supervision. Along with the further opening of airspace, we can further reduce limitations on purchasing and utilizing private planes. We can adopt “criteria” and “approval” management systems for non-commercial and commercial aviation. The “criteria” system means that any enterprise or individual, once conforming to legal requirements, can conduct non-commercial general aviation activities only through registering in responsible bureaus. The “approval” system means that enterprises, conforming to legal requirements, must submit applications to responsible bureaus conduct.

Only when they are granted with business certificates after their applications being approved, and perform the formalities of industrial and commercial registration via granted business certificates, can they conduct commercial general aviation activities. The combination of regulations and services is realized gradually by means of the above legislation.

The general aviation legislation in our country places too much emphasis on regulation function and lacks the service consciousness, which is unfavorable for the development of the general aviation industry as a whole. With regard to the legislative concept, we should lay equal stress on regulation and service, reduce administrative permission and market supervision. Furthermore, we can further reduce the limitations on buying or utilizing private airplanes along with the gradual openness of low-altitude airspace, and implement two management

systems naming “criteria system” and “approval system” according to the division of commercial and non-commercial operations.¹⁵⁾

2.3. Attaching Importance to Social Benefits

German jurist Jhering considers that laws aim at maintaining social benefits. Social benefits serve as the creator and the only source of laws, and all laws are generated for the sake of social benefits. Laws should try to keep balance between various benefits, which are also the methods and tools of promoting such kind of balance.¹⁶⁾ Pound further puts forward that modern laws exist with the purpose of present or future acknowledgment of these benefits.¹⁷⁾

With respect to their functions, laws is intended to meet, coordinate and adjust overlapped or frequently conflicting requirements. Laws can also directly provide guarantees or offer indirect guarantees for these social benefits through defining and coordinating them in order to let the most benefits or benefits of top importance to our culture take effect and reduce the sacrifice of other benefits in the whole benefit list to the lowest level.

This principle is also demonstrated in the general aviation legislation. The development of general aviation is significant for ensuring the enforcement of social public service and maintaining that every social member can acquire the social public service provided by the government. The flexibility and rapidity of general aircraft makes it important in disaster relief, disaster releasing and rescuing and coping with emergencies. Especially in areas with poor conventional traffic conditions, the general aircraft has imponderable advantages. It is a significant mission for general aviation legislation to improve the social

15) Luan Shuang, “Some Issues and Countermeasures on China General Aviation Legislation”, (unpublished paper), at 18. (Notes prepared for the Seminar at 中國國際通用航空大會 on 17 October 2015).

16) Lv Shilun: Modern Western Law Schools (The first volume), Encyclopedia of China Publishing House, 1999. Page 299.

17) Roscoe Pound, Shen Zongling translated: Social Control by Laws, Commercial Press, 2010. Page 39.

rescue mechanism by means of laws.

The environmental protection is an important part of the social benefits. In the process of general aviation legislation, we need to clarify the duty of general aviation implementer in environmental protection and ecological balance, to ensure the realization of social benefits in environmental protection and ecological balance. The article 149 in *Civil Aviation Law* stipulates that when organizing and implementing operating flight, effective measures should be adopted to ensure the flying security and protecting the environment and ecological balance and to prevent doing harm to the environment, citizens, crops, domestic animals and so on. However, the law does not explicitly stipulate what effective measures should be adopted.¹⁸⁾ According to the *Environmental Protection Law of the PRC*, environment refers to the sum of all in-artificial and artificial natural factors which influence the existence and development of human beings. These factors include atmosphere, water, ocean, land, mineral resources, forests, prairies, wild creatures, natural monuments, cultural relics, natural reserves, scenic reserves, cities, countries and so on.¹⁹⁾ Effective measures should be taken to protect the ecological environment when developing and utilizing natural resources. The service scope of the general aviation is broad. Out of the consideration of protecting humanistic landscapes and ancient buildings, the content of protecting ancient buildings and humanistic landscapes should be added to the article 149 of the *Civil Aviation Law*.

Furthermore, the *Noise Pollution Prevention Law of the PRC* stipulates that any enterprise or individual has the duty of protecting the environment from noise pollution.²⁰⁾ The general aviation has the features of low-altitude flight and high aircraft noise, which disturb residents to rest and cause increasing

18) 《民用航空法》第149條,組織實施作業飛行時,應當採取有效措施,保證飛行安全,保護環境和生態平衡,防止對環境、居民、作物或者牲畜等造成損害。至于什么是有效措施,法律並沒有明確規定。

19) 《中華人民共和國環境保護法》第2條,環境是指影響人類生存和發展的各种天然的和經過人工改造的自然因素的總體,包括大氣、水、海洋、土地、礦藏、森林、草原、野生生物、自然遺迹、人文遺迹、自然保護區、風景保護區、城市和鄉村等。

20) 《中華人民共和國噪聲污染防治法》第7條,任何單位和個人都有保護環境不受噪聲污染的義務。

complaints from residents. China has not unified the methods of aircraft noise prediction and calculation, and China also lack related legal stipulation on how to cope with noise pollution and compensate residents. In practice, we lack legal basis in dealing with the influences of aircraft noise, which makes the noise problem linger. As a result, making stipulations relating to the noise problem is very necessary.²¹⁾

In addition, the extensive utilization of unmanned aerial vehicle (UAV) causes concern about its security and infringement on privacy. However, laws about UAV have not been enacted yet. It is a problem urgent to be solved that how to reach a balance between the UAV business and social benefit protection.²²⁾²²⁾

2.4 Compatible with International Principle

The international cooperation is the only way to developing Chinese general aviation. However, the current specifications about general aviation are incompatible with international principles and will be obstacles to international cooperation.

For example, our country's definition of general aviation is a little bit different from that generally used at the international level. As defined in *Convention on International Civil Aviation Annex 6-Operation of Aircraft*, operations of general aviation covers all kinds of operations of aircraft excluding commercial operations of air transportation and aerial works (such as Go-Around and Amplitude Modulation). Aerial work operations mean that aircraft are used for specialized services including artificial precipitation, aerial rescue, aerial forest fire protection, anti-seismic and disaster resistance, aerial photograph, land detection, marine patrol, urgent rescue and air advertisements. The feature shared

21) Diao Weimin: The Legal System of General Aviation and Its Improvement, Journal of Beijing University of Aeronautics and Astronautics(Social Science Edition),2009/2.

22) Luan Shuang: Review and Prospect of Chinese UAV Legislation, Unmanned Aerial Vehicle, 2016/1.

by the above aerial works is that they have created social benefits and provided necessary services for the society besides making profits.²³⁾

Chinese Civil Aviation Law does not differentiate operational flights from general aviation.²⁴⁾ There are similarities between aerial work operations and other operations of general aviation. However, some distinctive differences indeed exist between them. The purpose of aerial work operations is “renting and making profits”, while general aviation usually does not take “renting and making profits” as its purpose. Moreover, most countries in the world do not consider aerial works as general aviation. From their perspectives, aerial work operations rather than general aviation operations are managed and granted with air operator certificates. In addition, ICAO Aviation Committee considers that there are significant differences, in essence, between aerial work operations and other operations of general aviation. It also considers that aerial work operations are not international.

It is not necessary to establish standards and provide suggestions and measures for aerial works, which, however, restrains the development of general aviation. As a result, the second part of Convention on International Civil Aviation Annex 6 is not applicable to aerial works. Usually, all countries enact laws and regulations and implement necessary criteria by themselves. To be compatible with international aviation criteria, we need to consider how to differentiate general aviation and aerial works when modifying or enacting relative laws. Questions like that mentioned above need to be clarified.

23) 《國際民用航空公約》(附件六)一《航空器的運行》

24) 《中華人民共和國民用航空法》第145條 通用航空,是指使用民用航空器從事公共航空運輸以外的民用航空活動,包括從事工業、農業、林業、漁業和建築業的作業飛行以及醫療衛生、搶險救災、氣象探測、海洋監測、科學實驗、教育訓練、文化體育等方面的飛行活動。

III. Specify Basic Legislative Principles

3.1. Principle of Coordination

Coordination is a significant conception of system state and operation, referring to the quantitative and structural balances between various components, between components and subsystems and between subsystems and the whole system. Coordination provides foundation and prerequisites for bringing system functions into full play and optimizing system objectives. The principle of coordination persisted in the process of general aviation legislation is the guideline for the whole legislation. It is ensured that the completion and coordination in legislative contents and forms inside or between general aviation legislation by conducting coordination campaigns of the subjective legislation and adopting various coordinated measures, so as to form a harmonious and unified system.

Coordination between the civil aviation and general aviation. In the countries where the general aviation is well-developed, the establishment and utilization of airspace are very concrete, with strong operation and high transparency.²⁵⁾

However, standards for dividing the general aviation airspace are lacked and no appropriate low-altitude airspace has been established in China. Most of the general aviation operations are low-altitude or extreme low-altitude flight. The low-altitude airspace regulation system is an underlying limitation for developing the general aviation. The airspace should be applied for the general aviation operations according to the *General Aviation Flight Control Ordinance*.²⁶⁾ No flight is allowed without the permission of aviation administration departments.

Although the *General Aviation Flight Control Ordinance* has explicitly stipulated the procedure of applying for airspace, simplified the approval

25) Mao Zhenhua: Foreign Experience of General Aviation, Chinese and Foreign Culture, 2012/7.

26) 《通用航空飛行管制條例》

procedure and shortened the approval period, the procedure is still relatively complicated and time-consuming. The general aviation flight cannot be adjusted timely according to environmental changes, which weakens its efficiency, flexibility and convenience and influences the development of the general aviation.²⁷⁾ As a result, it is extremely significant to coordinate the civil aviation and general aviation by means of laws.

Coordination between military aviation and civil aviation. In our country, military and civil development technologies are separated. The system of separated management of military and civil airspace is implemented. Boundaries between military and civil aviation are artificially added, resulting in more coordination procedures for general aviation services and difficulties in exerting the convenience and efficiency of general aviation. General aviation industry is an economy of scale. It is an international trend to combine military aviation and civil aviation together.²⁸⁾ What we should do is to try to realize the combination and mutual progress of military and civil aviation by means of laws and regulations.

Coordination between departments. a great many high-level government departments need to be coordinated through relative laws and regulations in the general aviation industry. Coordination between departments include longitudinal coordination inner a department and lateral coordination between departments. Relations between the central and local government and between local governments need to be coordinated. In this manner, laws are demanded to regulate obligations, rights and benefits of multiple areas, departments and work units to reduce operating costs and exert its industrial advantages, which are efficiency, flexibility and convenience.

27) Zhang Jian: Influence of Low-altitude Airspace Opening on Air Traffic Control and Its Countermeasures, Journal of General Aviation Flight University of China, 2012/3.

28) <http://news.carnoc.com/list/238/238132.html>

3.2. Principle of Pertinence

The general aviation has its own rules and specialties, needing to be standardized using specialized laws and regulations. Because our country's civil aviation laws and regulations are enacted late, many regulations and systems in this field are learned or even copied from laws and regulations of US FAA, which causes much inconsistency between laws and regulations and the operating condition of our country's general aviation, and many laws and regulations are impossible or difficult to be implemented in practice.²⁹⁾²⁹⁾ At present, China has not yet possessed any specialized general aviation law, and the *Civil Aviation Act* is the only law relating to the general aviation in China. The *Civil Aviation Act* only covers a little about the general aviation. The condition mentioned above is not consistent with the developing conditions of China's general aviation. As a consequence, we must enact laws directing at the general aviation as soon as possible, such as specifying both the low-altitude airspace opening and laws relating to air approach controls, and simplifying and standardizing the approval procedure.

Efficiency and rapidity are two features of the general aviation. Some of the current approval procedures of general aviation are stricter and more complicated than those of civil aviation, which influences the functions of these approval procedures a lot. Furthermore, some problems and hidden dangers are generated without specifying related laws and regulations, such as the specification of general aircraft. In 1996, the enactment of the Civil Aviation Act is limited by multiple technologies. The differences between aircraft were distinctive and it was easy to differentiate them by their features. As a result, the objects specified in laws and regulations of the Civil Aviation Act were ambiguous and many specifications were made based on features of aircraft. Along with the technological advancement, the limitations between an increasing number of

29) <http://www.lyunx.com/article-13684-1.html>

aircraft turn indistinct. Many devices, having no effect on the aviation security in the past, gradually begin to influence aircraft flying in low-altitude airspace. These devices are represented by model unmanned airplanes. According to the requirements of China's laws, it is necessary for unmanned airplanes to conduct declarations and approvals before implementing flying operations.

However, no explicit legislative requirements are stipulated for model airplanes. Currently model airplanes are increasingly similar to real aircraft. Equipped with technologies including the FPV, model airplanes already can conduct beyond visual range flights, which has great impacts on flight activities of the general aviation.³⁰⁾³⁰⁾In addition, targeted laws need to be standardized for the construction and management of general aviation airports, and the specialization and standardization of both agencies for training employees in general aviation and agencies for issuing certificates.

3.3. Principle of Efficiency

The general aviation has time and space values. The time value of general aviation can be shown in the following two aspects: one is its speed; the other is its flexibility and convenience. And the space value of general aviation can be shown in the altitude and extension aspects. The flexibility and convenience of general aviation provide people with more initiatives and choices in their travel time and space. The American practices in this aspect can be learned.

The private aircraft market has recovered and been developing rapidly since 1950s. The *GI Bill of Rights* issued in 1944 stipulated that the government would pay flight training costs for veterans, which generated more pilots. Significantly, the American government adopted a series of measures to promote the development of private aircraft market after World War II. The first measure was

30) Luan Shuang: British and American Model Aircraft Manufacturing Regulation and Its Enlightenment, *Aeromodel*, 2016/2.

to introduce an advanced air traffic management system.

The American Civil Aeronautics Board established an air traffic control system containing 500,000 aircraft as planned in 1944 to cope with the predicted outburst of aviation industry. The American government further opened the airspace afterwards. Approximately 85% of the airspace were divided for civil aviation. The majority of low-altitude airspace under 3000 meters where most private aircraft conducted flights has been divided to be a non-regulated area since 1970s.³¹⁾ In this airspace, private aircraft did not need to submit flight plans in advance and only needed to report to the control tower before flying. If flights were conducted in airports without any control tower, they only needed to be reported to each other over the public airwaves.

The openness of the airspace undoubtedly ensured and promoted the rapid development of US general aviation. In addition, various governments of USA have vigorously constructed thousands of small-sized general aviation airports. Many pre-military airports have turned to be civil ones. All these measures play an indispensable role in ensuring and promoting the rapid development of US general aviation.³²⁾

In the process of general aviation operations, when some events which are not specified in relative laws and regulations happens, the bureau supervisor, taking security and their own responsibilities into account, usually adopts higher standards other than lower ones while conducting regulation scrutiny. If no legislative standards are available in CCAR-91, then CCAR-135 can be referred to. If no legislative standards are available in CCAR-135, then CCAR-121 will be consulted. In this manner, a high threshold is set for general aviation enterprises, influencing their efficiency. As a result, if no relevant regulations are found in high-level laws, then relative standards specified in low-level laws instead of laws of higher levels should be referred to. Otherwise, a higher

31) http://3y.uu456.com/bp_3z6k972m9d77xpp57wyk_2.html

32) http://news.ccaonline.cn/Article/2015-1-9/390117_1.shtml

threshold is set for enterprise operations and supervision pressure of the bureau is increased. This practice also does not conform with principles enforced in Chinese laws and regulations. Only specifying the principle of laws and regulations enforcement in the Civil Aviation Laws can we improve the efficiency and effectiveness of laws and regulations enforcement, and can we, to some extent, reduce pressures of general aviation enterprises. To indicate that general aviation with rapidity, high efficiency and flexibility is part of the transportation industry, general aviation should form an approval and management procedure which is the same as or similar to that in highway transport. The purchase and registration in general aviation should conform to standards specified in laws and regulations, and be equipped with relevant licenses.

With respect to pilots and other employees in general aviation, they should be granted with driving licenses and other relative licenses respectively after passing examinations. As long as personnel in general aviation and aircraft are equipped with legal certificates and flights are conducted in legal air lines, this flight procedure is legal with no need for further approval.

3.4. Principle of Security

The prerequisite for developing the general aviation is to release airspace control. Releasing airspace control is a double-edged sword. On the one hand, it can provide opportunities for developing general aviation; on the other hand, the problems of public security and national defense interest brought about by it should be pay much attention to. Private airplanes are scarce in many countries which release airspace control. How to balance between the maximum use of resources of Chinese airspace and the according potential threats to Chinese national interests and social security is a problem needed to be considered when making laws. How to deal with this problem is directly related to the

development of Chinese general aviation. The countries with well-developed general aviation hold strict regulations for the security of general aviation operations. For example, the Australian Civil Aviation Security Authority (CASA) has regulated that non-commercial unmanned planes should not be operated in the following situations: the place within three miles from airports; the controlled airspace more than 400 feet from the ground (big towns and cities); the airspace above crowded areas; the place within 30 meters from the public; at night.³³⁾ China conducts strict regulations for airspace. Theoretically, all planes, big or small, commercial or non-commercial, should report their flight plans in advance. However, due to some reasons such as unfamiliarity with reporting procedure and difficulty of acquiring permission, lots of unapproved flights are being conducted.³⁴⁾

These unapproved flights hinders much danger. In addition, the insurance system, functioned as security defense and indemnificatory measure, plays an indispensable role. Take unmanned planes as an example, no previous cases of providing insurances for unmanned planes exist. It is always the case that no reasonable ways of compensation can be offered after happening accidents.³⁵⁾ With regard to the insurance system design, insurance companies only provide accident insurance of personal injury caused by unmanned planes. And the insurance for devices of unmanned planes, responsibilities of the third party and personal security of operators should also be included in the category of legal protection.

33) <http://www.caac.com.cn/news/61882.html>

34) <http://www.fs0757.com/news/14/1022/155912810552749.htm>

35) http://news.xinhuanet.com/air/2015-03/30/c_127636150.htm

IV. Construct a Unified Legislative System

Currently, the system of Chinese general aviation laws consists of national legislation, administrative laws and regulations and civil aviation regulations (CAR). Some problems exist in three components of the system. From the perspective of national legislation, 6 articles in Chapter 10 of *Civil Aviation Law of the People's Republic of China* provide regulations for general aviation operations. However, the content is not concrete enough to offer scientific guides for enacting general aviation laws and regulations.³⁶⁾

*Provisional Rules of the State Council on General Aviation Management*³⁷⁾ and *Regulations on General Aviation Flights*³⁸⁾ only provide theoretical principles for promoting the industrial development of general aviation. They offer unclear relative guarantee measures and incomplete implementation details, and do not provide clear guidance for the local construction of general aviation policy and regulation system. From the perspective of CAR, the current 117 systems of Chinese airworthiness regulations are classified into 11 groups, lacking corresponding pertinence and flexibility required by general aviation regulations.

Some technical flight standards and certificates are granted and utilized according to public aviation transportation, while others are regulated via notices or have not been unified yet. Some distance still exists between Chinese practice and requirements of international civil aviation organizations in terms of the stringency of operation management and standards.³⁹⁾

The current task of top priority is to classify rules and requirements needed by general aviation into distinct levels, groups and items of the general aviation

36) 《中華人民共和國民用航空法》以第145—150條

37) 《國務院關於通用航空管理的暫行規定》

38) 《通用航空飛行管制條例》

39) <http://news.carnoc.com/list/308/308693.html>

law system. Decentralizing management and approval authorities should be accompanied by strengthening policy guidelines for the construction of local laws and regulations. In this manner, a law and regulation system, centered on laws and consisting of administrative laws regulations, industrial regulations, implementation details, industrial policies and local laws and regulations, is constructed.

Modify the *Civil Aviation Law* to make general aviation laws complete. It is recommended that the following contents are added and supplemented: establishing national support policies for general aviation to improve the development environment of general aviation and revitalize the general aviation industry; establishing principles for low-altitude airspace openness and management; establishing principles for planning and constructing general aviation airports, such as the principle that planning and constructing transport airports should be combined with requirements of general aviation services; planning the construction of general aviation airports and operating systems of security infrastructure; clarifying basic rights and obligations of general aviation operators; clarifying the definition and service range of general aviation, etc.

Enact the *Regulations of General Aviation Development*. The central and local government establishes some supporting policies for general aviation industry, strengthening the supporting force for government finance, financial services, revenues, prices and so on. For example, the system that the central and local government supports research, development and manufacture of general aviation can be established, import tariffs, added-value taxes of general aviation are recommended to be reduced and corporate income taxes of general aviation enterprises generated from carrying out public welfare projects including agricultural and forestry projects ought to be decreased. Furthermore, we can identify principles and management systems of general aviation operation prices, identify access principles and operating systems of general aviation market and make the public welfare of general aviation and principles of compensation for

governmental expropriation explicit.

At the same time, we can further make the system of general aviation laws, regulations and standards perfect, simplify enterprise executive approval procedures, reduce administrative costs of enterprise operations and broaden profitable channels and space. Additional, what we can do is to make the system of general aviation laws, regulations and standards perfect, reduce the access threshold and operating costs of general aviation, strengthen security supervision and further encourage more social capital to be invested in general aviation.

Accelerate the establishment, modification and abolition of Chinese general aviation laws to intensify the coordination and uniformity of regulations. The detailed practices include revising general aviation market admittance rules. What we can do is to specify the classification methods of general aviation operations, simplify registration formalities of non-operating general aviation and promote the modification of general aviation approval procedures. Besides, we can make operation systems and technical norms of air traffic control perfect to be accustomed to the features of Chinese general aviation. We can also accelerate to enact the construction standards of different kinds of general aviation operations and set norms for construction procedures, along with establishing the operation management and service guarantee systems of low-altitude airspace. Meanwhile, we can make the general aviation security supervision system perfect, intensify the construction of general aviation security systems and complete the general aviation personnel qualification and training systems.⁴⁰⁾

40) Wang Fengzhen: Study on Consummating the Law and Rule System of General Aviation in China, Journal of General Aviation Flight University of China, 2012/5.

V. Conclusion

There are enormous investment advantages existing in the general aviation. The aviation industry enjoys the reputation of “the flower of the industry”, and plays an irreplaceable role in multiple fields including agriculture, forestry, industry, detection, meteorology, earthquake rescue, and sports. Besides aircraft manufacturing and airport construction, the industrial chain of general aviation also covers services including education and training, ground maintenance, and insurance. The input-output ratio of general aviation is higher than that of other industries. Therefore, general aviation will be considered as a newly-emerged industry which can boost domestic demands, facilitate employment, and promote domestic economic development.

Well enacted laws can provide a favorable legal environment for, and maintain and promote the development of Chinese general aviation.

Strengthen Chinese general aviation legislation. First, establish scientific legislation ideas. Based on the idea of promoting development of general aviation industry, place emphasis on both regulation and service, pay attention to social benefits, and rise in line with international standards.

Second, clarify basic principles of legislation. Establish principles of coordination, pertinence, efficiency, and security.

Third, construct a unified legal system.

In the Fifth Plenary Session of the Eighteenth Central Committee of CPC, it is clearly clarified that we should exert great efforts to develop aviation manufacturing, civil aviation transportation, and general aviation. The draft of the “13th Five-Year” Plan for Chinese Civil Aviation (during years between 2016 and 2020)⁴¹⁾ proposed that we should spare no efforts to develop aviation, accelerate improvement of the legal system of general aviation, further reduce maintenance,

41) <http://www.chinabgao.com/k/minhang/fiveyears/>

operation, and development costs, and create an environment with secure regulations which conform to general aviation features. Strengthen legislation in multiple fields including basic system, aerospace management, economic regulation, trial filed, airport maintenance, operation regulation, security guard, and unmanned aircraft management.

In the list of legislation plan projects made by the civil aviation administration, enormous laws or regulations have been planned to be enacted or revised, including General Aviation Administration Regulations, Aerospace Management Approaches, General Aviation Flight Control Regulations, Non-commercial General Aviation Management Provisions, Commercial General Aviation Management Provisions, General Aviation Aircraft Management Regulations, General Aviation Security Guard Rules, Civil Unmanned Aircraft Usage Management Regulations.

It is planned to initially construct a framework of Chinese general aviation legal system, which is dominated by Provisional Rules of the State Council on the General Aviation Management and General Aviation Flight Regulation Provisions, and is mainly made up of general aviation admission rules (including General Aviation Business License Management Regulations, Non-commercial General Aviation Registration Management Regulations, and Regulations for Managing commercial Operations Conducted by Overseas General Aviation Enterprises in China), general aviation guarantee rules (including General Airport Management Regulations and General Aviation Security Guard Rules), and other rules related to general aviation.

The legislation of Chinese general aviation is well underway. Several key points need to be highlighted in the Chinese general aviation legislation: one is to facilitate and promote general aviation development; two is to reduce government intervention and transform to service industry; three is to coordinate the relationships between public transportation and general aviation; four is to integrate existing legal resources; and five is to rise in line with international

standards. Chinese general aviation is developing rapidly, which results in requirements for legal regulations in multiple fields. Therefore, give priority to legislation in fields in an urgent need of legal regulations. For example, China is a world leader in unmanned aircraft. UAV industry has developed rapidly. The “black fly” of UAV (flight without permission) increasingly serious.⁴²⁾ Safety accidents have occurred many times.⁴³⁾ However, China does not have complete laws associated with unmanned aircraft. Legislation in this filed can be give priority to.

Reference

- Yang Hui, He Xiuhui: General Civil Aviation Law, China University of Political Science and Law Press, 2009.
- Dong Nianqing: An Academic Study on Cases of Civil Aviation Law, Mass Press, 2001.
- Zong Suning: Condition and Thinking of Chinese General Aviation Industry, Aviation Industrial Publishing House, 2014.
- Gen Jianhua, Wang Xia, etc.: Introduction to General Aviation, Aviation Industrial Publishing House, 2013.
- Lv Shilun: Modern Western Law Schools (The first volume), Encyclopedia of China Publishing House, 1999.
- Roscoe·Pound, Shen Zongling translated: Social Control by Laws, Commercial Press, 2010.
- Jerry A.Eichenberger, Chen Jingxian translated: American General Aviation Law: Analysis and Application of Laws and Regulations, Aviation Industrial Publishing House, 2014.

42) <http://tech.qq.com/a/20160105/009981.htm>

43) <http://news.163.com/uav/16/0926/17/C1TH1RIJ000181OH.html>

- Shandong Science and Technology Association: General Aviation Development Issues and Considerations, Beijing University of Aeronautics and Astronautics Press, 2015.
- Konstantinos Dalamagkidis, Kimon P. Valavanis, and Les A. Piegl translated: UAV Converged into the National Aerospace System, National Defense Industry Press, 2015.
- Shi Yongsheng, Wang Xia, Gen Jianhua: General Aviation Operation and Management, Aviation Industrial Publishing House, 2007.
- Zhang Na, Wang Jing: Study on General Aviation Development, China Railway Publishing House, 2013.
- John J. Sheehan, Wang Xia, Zhu Pengjie, Tan Ruiyi: Business Aviation Operation and Management, Aviation Industrial Publishing House, 2006.
- Wang Xia, Chen Zhaopeng, Han Shasha : Basis of General Aviation—FBO, Aviation Industrial Publishing House, 2014.
- Isabella Henrietta Philepina Diederiks-Verschoor, Zhao Wei translated: Introduction to Aviation Law, China Translation & Publishing Corporation, 1987.
- ALEXANDER T. WELLS, AIR TRANSPORTATION: A MANAGEMENT PERSPECTIVE (2d ed. 1984).
- Industry, NASA, the FAA, and Universities Join Forces to Revitalize the General Aviation Industry, AGATE FLIER, Aug. 1994.
- Dick Koenig, Learn to Program, in General Aviation: Building for the Future on its Strengths & Diversity, 4TH ANNUAL FAA GENERAL AVIATION FORECAST AND CONFERENCE PROCEEDINGS 111 (1994).
- Jennifer L. Anton, A Critical Evaluation of the General Aviation Revitalization Act of 1994, AIR L. & COM. (1998).
- Thomas H. Kister, General Aviation Revitalization Act: Its' Effect on Manufacturers, 65 DEF. COUNS. J. (1998).
- Scott E. Tarry & Lawrence J. Truitt, Rhetoric and Reality: Tort Reform and the Uncertain Future of General Aviation, 61 J. AIR L. & COM. (1995).

- William L. Oliver, Jr. & Michael G. Jones, *Repose Statute Helps Revitalize an American Industry: the General Aviation Revitalization Act of 1994 (GARA)*, *AVIATION Q.* (1997).
- General Aviation Manufacturers Association, *Five Year Results: A Report to the President and Congress on the General Aviation Revitalization Act (1999)* [hereinafter "Five Year Results"].
- Wang Fengzhen: *Study on Consummating the Law and Rule System of General Aviation in China*, *Journal of General Aviation Flight University of China*, 2012/5.
- Luan Shuang: *British and American Model Aircraft Manufacturing Regulation and Its Enlightenment*, *Aeromodel*, 2016/2.
- Diao Weimin: *The Legal System of General Aviation and Its Improvement*, *Journal of Beijing University of Aeronautics and Astronautics (Social Science Edition)*, 2009/2.
- Luan Shuang: *Review and Prospect of Chinese UAV Legislation*, *Unmanned Aerial Vehicle*, 2016/1.
- Gao Qiming: *Analysis & Inspiration of the Development Experience of US General Aviation Industry*, *Journal of Xi'an Aeronautical University*, 2013/6.
- Mao Zhenhua: *Foreign Experience of General Aviation*, *Chinese and Foreign Culture*, 2012/7.
- Zhang Jian: *Influence of Low-altitude Airspace Opening on Air Traffic Control and Its Countermeasures*, *Journal of General Aviation Flight University of China*, 2012/3.
- International Civil Aviation organization (ICAO); <http://www.icao.int>
www.caac.com.cn

Abstract

Some Issues on China General Aviation Legislation

Luan Shuang*

General aviation and air transport are two wings of the civil aviation industry. Chinese air transport is developing rapidly, and has become the world second air transport system only second to US since 2005. However, Chinese civil aviation is far behind the world average level, and cannot meet requirements of economic construction and social development. The transition and structural adjustment of Chinese economy provide the general aviation with a unprecedented broad market. The prospect of general aviation is promising and anticipated. The development of general aviation industry needs the legislative supports, and the current legislative conditions of Chinese general aviation are undoubtedly far behind the realistic requirements.

Accelerating the legislation in Chinese general aviation industry requires scientific legislation concept. First, Legislation must promote development of general aviation industry. The general aviation will serves as a Chinese emerging industry that boosts domestic demand, promotes employment and expedite domestic economic development. We should, based on both the concept of promoting the industrial development of general aviation and national industrial planning, enact and rectify relative laws and regulations. And we should also straighten out the relationship between aviation security and industrial development and promote the revolution of low-altitude airspace management in an all-round way, in order to improve the utilization rate of airspace resources, classify and establish airspace, simplify examination and approval procedure and

* Director, Air Law and Space Law Institute. Professor, School of Law, Nanjing University of Aeronautics and Astronautics in China.

intensify operation management. In addition, what we should do is to expedite the infrastructure layout construction, guide the differentiated but coordinated development of general aviation industries in various areas, establish a united supervision mechanism of general aviation, redistrict the responsibilities of Chinese Air Control Agency and set up legislation, law enforcement and judicial systems with clarified institutions, clear positioning and classified responsibilities, so as to usher in a new era of the legislative management of Chinese general aviation industry. Second, shift the focus from regulations to both regulations and services. Considering the particularity of the general aviation, we should use American practices for reference and take into account both regulation and service functions when enacting general aviation laws. For example, we should reduce administrative licensing and market supervision, and adopt “criteria” and “approval” management systems for non-commercial and commercial aviation. Furthermore, pay attention to social benefits. Complete social rescuing mechanism through legislation. It should be clarified in legislation that general aviation operators should take the responsibilities of, and ensure to realize social benefits of environmental protection and ecological balance. Finally, rise in line with international standards. Modify Chinese regulations which is inconsistent with international ones to remove barriers to international cooperation.

Specify basic legislative principles. One is the principle of coordination. Realize coordination between the civil aviation and general aviation, between military aviation and civil aviation, and among departments. Two is the principle of pertinence. The general aviation has its own rules and specialties, needing to be standardized using specialized laws and regulations. Three is the principle of efficiency. To realize time and space values of general aviation, we should complete rules in aerospace openness, general aviation airport construction, general aviation operations, and regulation enforcement. Four is the principle of security. Balance the maximum use of resources of Chinese airspace and the according potential threats to Chinese national interests and social security, and

establish a complete insurance system which functions as security defense and indemnificatory measure.

Establish a unified legal system. Currently, the system of Chinese general aviation laws consists of national legislation, administrative laws and regulations and civil aviation regulations (CAR). Some problems exist in three components of the system, including too general content, unclear guarantee measures, incomplete implementation details, and lacking corresponding pertinence and flexibility required by general aviation regulations, stringency of operation management and standards, and uniformity of standards. A law and regulation system, centered on laws and consisting of administrative laws regulations, industrial regulations, implementation details, industrial policies and local laws and regulations, should be established. It is suggested to modify the Civil Aviation Law to make general aviation laws complete, enact the *Regulations of General Aviation Development*, and accelerate the establishment, modification and abolition of Chinese general aviation laws to intensify the coordination and uniformity of regulations.

Key words : General Aviation, legislation, industry, industrial development, regulation and service, social benefits, rising in line with international standards, coordination, pertinence, efficiency, security, unified legal system.

摘要

中國通用航空立法若干問題研究

欒爽*

通用航空與運輸航空是民航業的兩翼。中國運輸航空發展迅速，2005年已成爲僅次于美國的世界第二大航空運輸系統，而通用航空却遠遠落后于世界平均水平，不能適應經濟建設和社會發展的需要。中國經濟轉型和結構調整使通用航空獲得了前所未有的廣闊市場空間，通用航空的發展前景令人期待。通航產業的發展需要法律的支持，中國通用航空法律現狀遠遠落后于現實需求。

加快中國通用航空立法，需要有科學的立法理念。首先，立法必須促進通航產業發展。通用航空將會成爲中國擴大內需與促進就業、推動國內經濟發展的新興產業。立足于促進通用航空產業發展的觀念，根據國家的產業規劃，制定修改相關的法律、法規。理順空防安全與產業發展的關係，全面推進低空空域管理改革，以求提高空域資源利用率，分類劃設空域，簡化審批程序，加強運行管理。推進基礎設施布局建設，引導各地通用航空產業差异化協同發展。建立通用航空聯合監管機制，重新劃分中國空中管理機構的職責，構建機構明確、定位清晰、職責分明的立法、執法、司法體系，開啓中國通用航空產業法制化管理新常態。其次，從管制向管制與服務并重。借鑒美國的做法，考慮通用航空業的特殊性，立法應兼顧管制與服務功能。例如，淡化行政許可與市場監管，對通用航空實行“准則制”和“審批制”兩種不同的管理制度。再次，注重社會利益。通過立法完善社會救援機制。立法中需要明確通用航空活動的實施者對保護環境和生態平衡的義務，保證環境保護及生態平衡的社會利益的實現。最后，與國際航空准則接軌。修改與與國際准則不一致的地方，掃除國際合作的障礙。

明確通航立法的基本原則。一是協調性原則。實現民用航空與通用航空的協調，軍用與民用之間的協調，各部門之間的協調。二是針對性原則。通用航空具

* 中國南京航空航天大學法學院教授，航空法與空間法研究所所長。

有自身的規律和特殊性，需要專門性的法律法規加以規範。三是效率性原則。爲實現通用航空具的時間價值和空間價值，應完善空域開放、通用機場修建、通航運營、法規執行等方面規定。四是安全性原則。平衡中國空域資源得到最大化利用和由此給中國的國家利益和社會安全帶來的潛在威脅，建立完善的保險制度作爲安全性的防范和保障性措施。

构建統一的法律體系。当前中國通用航空法律體系主要由國家立法、行政法規、民航規章三個層次構成，這三個層次都存在着一定的問題，主要是內容過于籠統，保障措施不明確、實施細則有待完善，缺乏針對性和靈活性，運行管理的嚴密性和運行標準的統一性方面有較大欠缺等。應建立一套以法律爲核心、行政法規、行業規章、實施細則、產業政策和地方法規共同組成的法律法規體系。建議修改《民航法》，完善通用航空法律；制定法規《通用航空產業發展條例》；加快我國通用航空規章立改廢工作，增強規章協調性和統一性。

關鍵詞：通用航空，立法，產業，產業發展，管制與服務，社會利益，接軌，協調性，針對性，效率性，安全性，統一的法律體系。

中國通用航空立法若干問題初探

摘要：中國經濟轉型和結構調整使通用航空獲得了前所未有的廣闊市場空間，通用航空的發展前景令人期待。產業的發展需要法律的支持，中國通用航空法律現狀，無疑遠遠落后于現實需求。加快中國通用航空立法，需要有科學的立法理念，明確的立法原則，以及統一的法律法規體系。

關鍵詞：通用航空 立法 產業

《中華人民共和國民用航空法》第145條規定，通用航空是指使用民用航空器從事公共航空運輸以外的民用航空活動，包括從事工業、農業、林業、漁業和建築業的作業飛行以及醫療衛生、搶險救災、氣象探測、海洋監測、科學實驗、教育訓練、文化體育等方面的飛行活動。¹⁾ 2003年的《通用航空飛行管制條例》第3條作了更具體的規定，是指除軍事、警務、海關緝私飛行和公共航空運輸飛行以外的航空活動，包括從事工業、農業、林業、漁業、礦業、建築業的作業飛行和醫療衛生、搶險救災、氣象探測、海洋檢測、科學實驗、遙感測繪、教育訓練、文化體育、旅遊觀光等方面的飛行活動。²⁾

2007年的《一般運行和飛行規則》（CCAR-91-R1）把民用航空分為三部分：公共運輸航空、通用航空及航空作業，以運營人為標準，將通航企業劃分為商業非運輸運營人及私用大型航空器運營人、航空器代管人，從業務上分為一般商業飛行、訓練飛行、空中游覽、農林噴灑作業飛行、旋翼機機外載荷作業飛行等，對於超輕型飛行器的運行要求，定義為由單人駕駛、僅用于娛樂或體育活動、不需要任何通航証的小型空中飛行器具。³⁾

1) 《中華人民共和國民用航空法》第145條規定，通用航空是指使用民用航空器從事公共航空運輸以外的民用航空活動，包括從事工業、農業、林業、漁業和建築業的作業飛行以及醫療衛生、搶險救災、氣象探測、海洋監測、科學實驗、教育訓練、文化體育等方面的飛行活動。

2) 《通用航空飛行管制條例》第3條規定，是指除軍事、警務、海關緝私飛行和公共航空運輸飛行以外的航空活動，包括從事工業、農業、林業、漁業、礦業、建築業的作業飛行和醫療衛生、搶險救災、氣象探測、海洋檢測、科學實驗、遙感測繪、教育訓練、文化體育、旅遊觀光等方面的飛行活動。

3) 《一般運行和飛行規則》（CCAR-91-R1）把民用航空分為三部分：公共運輸航空、通用航空及航空作業，以運營人為標準，將通航企業劃分為商業非運輸運營人及私用大型航空器運營人、航空器代管人，從業務上分為一般商業飛行、訓練飛行、空中游覽、農林噴灑作業飛行、旋翼機機外載荷作業飛行等，對於超輕型飛行器的運行要求，定義為由單人駕駛、僅用于娛樂或體育活動、不需要任何通航証的小型空中飛行器具。

1912年，萊特兄弟發明飛機九年后，中國第一位飛機設計師馮如研制的液冷式發動機雙翼飛機誕生。⁴⁾ 一個多世紀過去了，由于多種原因，中國通用航空產業發展并不盡人意。⁵⁾ 通用航空與運輸航空是民航業的兩翼。建設民航強國不僅要有發達的運輸航空，還應有發達的通用航空來支持。中國運輸航空取得了長足發展，2005年已成為僅次于美國的世界第2大航空運輸系統。⁶⁾ 而通用航空却遠遠落后于世界平均水平，不能適應當前經濟建設和社會發展的需要。近年來，經濟轉型和結構調整使通用航空獲得了前所未有的廣闊市場空間。尤其是最近國家發展通用航空的政策信號不斷釋放，低空空域管理改革的等重大政策蓄勢待發，通用航空的發展前景令人期待。⁷⁾ 產業的發展需要法律的支持，盤點中國通用航空法律現狀，無疑遠遠落后于現實需求，因此，研究中國通用航空立法問題，確實迫在眉睫。

一. 樹立科學的立法理念

1. 促進航空產業發展

通用航空有着巨大的投資機會，航空工業有着“工業之花”的美譽。⁸⁾ 它在農業、林業、工業、勘探、氣象、抗震救災和體育運動等領域發揮着不可代替的作用。通用航空產業鏈除了飛機制造、機場建設外，還延伸到教育培訓、地面維護、保險等業務，通用航空投入產出比高于其他行業，⁹⁾ 因此，通用航空將會成為中國擴大內需與促進就業、推動國內經濟發展的新興產業。¹⁰⁾

良好的立法能夠為中國通用航空業的發展提供有利的法律環境，起到保障和促進作用。目前相關法律法規仍停留在原則層面，尚不能滿足產業快速發展的需要，甚至在一定程度上制約了其發展。

當務之急是立足于促進通用航空產業發展的觀念，根據國家的產業規劃，制定修

4) http://tech.gmw.cn/scientist/2015-09/21/content_17108410.htm

5) <http://news.carnoc.com/list/339/339837.html>

6) <http://news.cctv.com/financial/20070125/109850.shtml>

7) <http://news.sina.com.cn/o/2015-12-02/doc-ifxmhqaa9767216.shtml>

8) <http://news.carnoc.com/list/232/232580.html>

9) <http://news.carnoc.com/list/302/302947.html>

10) <http://news.163.com/14/1230/17/AENSUK4P00014AEE.html>

改相關的法律、法規。理順空防安全與產業發展的關係，全面推進低空空域管理改革，以求提高空域資源利用率，分類劃設空域，簡化審批程序，加強運行管理。推進基礎設施布局建設，引導各地通用航空產業差異化協同發展。建立通用航空聯合監管機制，重新劃分中國空中管理機構的職責，構建機構明確、定位清晰、職責分明的立法、執法、司法體系，開啓我國通用航空產業法制化管理新常態。¹¹⁾

通過立法加強通用航空產業鏈相關配套措施的法制建設，統籌通用航空機場建設規範，促進通用航空機場、運營基地及航空油料等配套保障措施的投資與建設，制定與通用航空發展水平相適應的通航機場收費標準，建立專業技術人員培養與流動機制。

發展通用航空最重要的因素就是要加快基礎設施建設，即加快通用航空機場的建設。現在我國2800個縣，真正意義上的通用航空機場只有78座。美國各類機場是19700多座，通用機場有15000多座。¹²⁾應推動各地加快相關的基礎設施建設工作，並制定和完善相應的政策法規，並地方法規的形式進行支持。

通航發展一定要吸收包括民間資本在內的多元的資本，民間資本的注入，將會有力地推動我國通航事業的發展。據統計，截至2014年11月，中國的239家通用企業中，民營企業達到80%以上。¹³⁾目前，有許多民營資本與地方政府合作修建通航機場、在全國修建通航飛機起降點，應通過法律鼓勵多元資本投資通用航空產業。

2. 從管制向管制與服務並重

鑒於通用航空業的特殊性，其立法應兼顧管制與服務功能。在這一方面，美國的許多做法值得借鑒。美國聯邦航空管理局(FAA)是美國通用航空行政管理機構，隸屬於美國聯邦交通運輸部。聯邦航空管理局的主要任務是保障民用航空的飛行安全，促進民航事業的發展，沒有行政許可和市場監管職能，不直接經營民航企業，是純粹的運行和安全管理機構。FAA在行業監管上始終堅持寬嚴結合的原則：在運行和安全方面，實行嚴格監管，一是根據所制定的《聯邦航空條例》

11) 樂爽，“中國通用航空立法問題及對策”，(unpublished paper), at 12. (Notes prepared for the Seminar at 中國國際通用航空大會 on 17 October 2015).

12) <http://www.ethcy.com/htmls/info/2010515401.html>

13) <http://www.sirenji.com/article/201503/69164.html>

實施空中交通管制，進行安全培訓，確保運輸安全。二是為通用航空產品頒發型號合格證，生產許可證和適航證。三是對機場和各類航空設施進行定期檢查并頒發合格證。四是為通用飛機維護及地面保障等進行監督、控制和管理。而在行政許可和市場監管方面却十分慎重，他們認為過多的行政審批和市場監管可能扼殺通用航空產業發展，關鍵是要找到政府和市場的平衡點，讓監管促進和保證通用航空產業健康運行。美國通用航空管理的法律及標準非常全面，因此很少有政府審批，市場主要依靠法律進行規範。

在美國，通用航空飛行不需要審批和備案，所有民用機場免費開放，除了加油外沒有任何費用，運行成本非常低。¹⁴⁾由此可見，美國的通用航空立法既起到管制的作用，同時很好地實現了服務的職能。

我國的通用航空立法過度重視管制的職能，服務的意識近乎缺失，非常不利于整個通用航空的發展。從立法理念上，應將管制與服務并重，淡化行政許可與市場監管，可以隨着低空空域的逐步開放，進一步減少私人飛機的購買、使用的限制，按照非經營性和經營性的劃分，對通用航空實行“準則制”和“審批制”兩種不同的管理制度。所謂“準則制”，即符合法定條件的均可從事非經營性通用航空活動，只需向主管機關辦理登記手續；所謂“審批制”，即是具備法定條件從事經營性通用航空活動，有關企業法人必須向主管機關提出申請，經審查批准，取得主管機關頒發的經營許可證并持經營許可證辦理工商登記之後，方可從事經營性通用航空活動。通過以上立法，逐步實現管制與服務相結合。¹⁵⁾

3. 注重社會利益

德國法學家耶林認為，法律的目的在于社會利益，其是法律的創造者，是法律的唯一根源，所有的法律都是為了社會利益的目的而產生的，法律要使各種利益之間保持平衡，也是促進這一平衡的手段和工具。¹⁶⁾龐德進一步提出，現代法律的存在就是為了承認或者將來承認這些利益，從法律的作用來看，它是為了滿足、協調、調整這些重疊的和經常沖突的請求、要求、或直接予以保障，或通過

14) 高啓明《美國通用航空產業發展的經驗剖析及啓示》，西安航空學院學報，2013年，第6期。

15) 樂爽，“中國通用航空立法問題及對策”，(unpublished paper), at 18. (Notes prepared for the Seminar at 中國國際通用航空大會 on 17 October 2015).

16) 呂世倫，現代西方法學流派（上冊）[M]，北京：中國大百科全書出版社，1999年，第299頁

界定和協調各種利益加以保障，以便使最大多數的利益或我們文明中最重要利益有效果，同時使整個利益清單中的其他利益的犧牲降低到最低程度。¹⁷⁾

通用航空立法就應該體現這一原則。發展通用航空，對於確保社會公共服務的實施，保障社會每一個成員得到政府提供的社會公共服務具有重要的現實意義。通用航空器的靈活性與迅捷性使其在搶險救災、救援救護、應對突發事件中發揮重要作用，尤其在常規交通條件惡劣的地區，具有無可比擬的優勢。通過法律完善社會救援機制是通用航空立法的重要使命。

環境保護是社會利益的重要組成部分。在通用航空立法中需要明確通用航空活動的實施者對保護環境和生態平衡的義務，保證環境保護及生態平衡的社會利益的實現。《民用航空法》第149條規定，組織實施作業飛行時，應當採取有效措施，保證飛行安全，保護環境和生態平衡，防止對環境、居民、作物或者牲畜等造成損害。至於什麼是有效措施，法律並沒有明確規定。¹⁸⁾

根據《中華人民共和國環境保護法》有關規定，環境是指影響人類生存和發展各種天然的和經過人工改造的自然因素的總體，包括大氣、水、海洋、土地、礦藏、森林、草原、野生生物、自然遺迹、人文遺迹、自然保護區、風景保護區、城市和鄉村等。¹⁹⁾ 開發利用自然資源，必須採取措施保護生態環境。通用航空業務範圍廣闊，出於保護人文景觀和古建築的考慮，應在《民用航空法》第149條中增加對古建築和人文景觀的保護。

其次，根據《中華人民共和國噪聲污染防治法》的規定，任何單位和個人都有保護環境不受噪聲污染的義務。²⁰⁾ 通用航空具有低空飛行的特點，航空器噪聲大，影響居民休息，小區居民投訴數量逐年增加。中國目前還沒有統一的航空器噪聲影響預測和計算方法，對噪聲污染的處理和對居民的補償辦法也缺乏相關的法律規定，實踐中處理航空器噪聲影響時因缺乏法律依據致使問題久拖未決，因此出台這方面的規定十分必要。²¹⁾

17) [美]羅斯科·龐德.通過法律的社會控制.沈宗靈譯.商務印書館.2010年.第39頁.

18) 《民用航空法》第149條規定，組織實施作業飛行時，應當採取有效措施，保證飛行安全，保護環境和生態平衡，防止對環境、居民、作物或者牲畜等造成損害。至於什麼是有效措施，法律並沒有明確規定。

19) 《中華人民共和國環境保護法》第2條規定，環境是指影響人類生存和發展各種天然的和經過人工改造的自然因素的總體，包括大氣、水、海洋、土地、礦藏、森林、草原、野生生物、自然遺迹、人文遺迹、自然保護區、風景保護區、城市和鄉村等。

20) 《中華人民共和國噪聲污染防治法》第7條規定，任何單位和個人都有保護環境不受噪聲污染的義務。

21) 刁偉民：《中國通用航空法律制度及其完善》，北京航空航天大學學報(社會科學版)，2009年第2期。

另外，隨着無人機的使用愈來愈廣泛，其安全性以及對隱私的侵犯開始引起關注。但目前的立法尚處於空白狀態，如何平衡發展無人機事業和保護社會利益也是通用航空立法亟待解決的問題。²²⁾

4. 與國際航空準則接軌

國際合作是發展中國通用航空的必經之路，但目前，關於通用航空的許多規定依然與國際準則不一致，將成為國際合作的障礙。

例如，我國對於通用航空的界定與國際通常使用的含義有所差異。在《國際民用航空公約》(附件六)一《航空器的運行》中，通用航空運行是指除商業航空運輸運行或航空作業(GA/AM)運行以外的航空器運行。航空作業是指航空器用於專門的服務，諸如人工增雨、航空物探、航空護林、抗震抗災、航空攝影、地面測量、海事巡邏、緊急搜尋、緊急援救、空中廣告等航空運行活動，這些作業的共同特征是以既以獲取報酬為目的，同時創造了社會效益，為社會提供了必須的服務。²³⁾

我國《民用航空法》並未將作業飛行從通用航空中區別開來。²⁴⁾航空作業運行與其他的通用航空運行有相同之處，但二者却別也很明顯。“出租和報酬”是航空作業運行的目的，而通用航空大多不以“出租和報酬”為目的，而且，世界上大部分國家不將航空作業作為通用航空來對待，並且一般不對通用航空運行頒發航空運營人合格証，而對航空作業運行進行管理並頒發航空運營人合格証。

另外，

ICAO航行委員會認為航空作業運行與其他的通用航空運行在本質上有較大的不同，也不具有國際性，制定航空作業的標準和建議措施是不必要的，這對通用航空的發展有一定的限制作用。所以《國際民用航空公約》(附件六)第2部分是不適用於航空作業，一般各國自己制定法規規章進行必要的規範辦法。與國際航空準則接軌，就要考慮在修改或訂立相關法律時，將通用航空與航空作業加以區分。諸如此類的問題，都需要厘清。

22) 樂爽：中國無人機立法回顧與前瞻，無人機，2016年第1期

23) 《國際民用航空公約》(附件六)一《航空器的運行》

24) 《中華人民共和國民用航空法》第145條 通用航空，是指使用民用航空器從事公共航空運輸以外的民用航空活動，包括從事工業、農業、林業、漁業和建築業的作業飛行以及醫療衛生、搶險救災、氣象探測、海洋監測、科學實驗、教育訓練、文化體育等方面的飛行活動。

二. 明确立法的基本原則

1. 協調性原則

協調，是關於系統狀態及運行的一个重要概念。它是指系統的各个組成要素之間、要素与子系統之間以及子系統与整个系統之間在數量上和結構上的平衡。協調是保證系統功能得以充分發揮、使系統目標達到最优化的基础和前提。在通用航空立法過程中堅持協調性原則，就是貫穿于整个立法活動的指導原則，通過立法主体的協調活動，采取各种的協調措施，確保所有通用航空立法內部及其相互之間在內容和形式上完整完備、協調一致，從而形成和諧統一的體系。

民用航空与通用航空的協調。在通用航空發達國家，空域划設和使用非常具体，操作性強，透明度高。²⁵⁾而我國缺少通用航空飛行空域划分標準，沒有合理划設低空空域。

通用航空作業大多作低空、超低空飛行。低空空域管制制度是影響通用航空發展的一个深層次原因。通用航空作業必須依照《通用航空飛行管制條例》²⁶⁾申請空域，未經航空管理部門獲准不能飛行。雖然《通用航空飛行管制條例》對申請空域使用手續作了明确規定，簡化了審批程序、縮短了審批時間，但仍較為複雜，耗時不少。通用航空飛行不能根据环境變化及時調整飛行計劃，嚴重削弱了通用航空高效、靈活、便捷的行業優勢，影響了通用航空市場的發展。²⁷⁾因之，通過法律手段，協調民用航空与通用航空，尤為重要。

軍用与民用之間的協調。我國軍用和民用研制、技術分立，空域采取軍、民航分割管理的體制，人為地設立壁壘，導致通用航空業務的協調環節較多，難以發揮通用航空便捷、高效的特点。²⁸⁾航空工業是規模經濟，軍民融合是行業發展的國際趨勢。應通過法律法規，實現軍民結合与共進。

部門之間的協調。通用航空產業需要相關法規協調的政府部門多，層次高。既有部門內部縱向關係的協調，又有各部門之間橫向關係的協調；既要協調中央与地方政府之間的關係，又要協調各地方政府之間的關係，這就要求以法律形式來

25) 毛振華:通用航空借鑒國外經驗，中外企業文化，2012年第7期

26) 《通用航空飛行管制條例》

27) 張健等：《低空開放對空管的影響及對策分析》，中國民航飛行學院學報，2012年，第3期。

28) <http://news.carnoc.com/list/238/238132.html>

規範各地區、各部門、各單位的責、權、利，以降低運行成本，實現通用航空高效、靈活、便捷的行業優勢。

2. 針對性原則

通用航空具有自身的規律和特殊性，需要專門性的法律法規加以規範。由於我國民航法規的建立和起步較晚，很多民航的規章體系都是借鑒甚至照搬美國FAA的法規，導致現實中很多法規與我國通航的運營情況并不相符，實際操作過程中出現很多無法執行，或者執行困難的地方。²⁹⁾目前，中國尚未有一部專門的通用航空法，關於中國通用航空的法律只有一部《民航法》，其中通用航空的只有很少一部分。這種狀況與中國通用航空的發展現狀是極不適應的。因此，必須盡快着手進行針對通用航空的立法。如盡快明確低空空域的開放與航線管理的立法。審批程序的簡化與规范化。高效、迅捷是通用航空的特色，目前有些比照民用航空的規定審批程序嚴格，手續繁瑣，時間周期較長，大大影響其作用的發揮。而另一方面，因為沒有相關的法律法規的界定，導致問題、隱患不斷出現。如通用航空器的界定。

1996年制定《民航法》的時候，受到當時各項技術的限制，各類航空器之間差別明顯，很容易通過其特征進行區分，因此在界定法律法規受用對象時較為籠統，很多界定是根據功能劃分。隨着技術的進步，越來越多的航空器之間界限變得逐漸模糊，很多以前并不影響航空安全的設備，也已經開始逐漸對低空運行的航空器產生影響，其中較為明顯的是航模與無人機。根據我國法規要求，無人機執行飛行任務必須提前進行申報和審批工作，然而對於航模却並沒有詳細的法規要求。如今的航模制作已越來越接近真實航空器，再加上FPV等技術的應用，航模已經可以超視距飛行，這對通航的飛行活動造成了極大的影響。³⁰⁾除此之外，通用航空機場的建設與管理，通用航空人員培訓機構與證件發放機構的專業化與规范化都亟需針對性的法律予以規範。

29) <http://www.lyunx.com/article-13684-1.html>

30) 樊爽：英美模型飛機規制及其啓示，《航空模型》2016年第2期

3. 效率性原則

通用航空具有時間价值和空間价值。通用航空的時間价值可体现在兩方面：一是速度。二是灵活便捷。通用航空的空間价值則体现在高度和广泛度兩方面。由于通用航空具有自由灵活、四通八達的特点，這賦予了人們在出行時間和空間上更多的主動權和選擇權，美國的做法值得借鑒。20世紀50年代開始，私人飛機市場衰蘇并迅速發展。1944年頒布的《美國軍人權利法案》（“The GI Bill of Rights”）規定政府將為老兵們支付飛行培訓的費用，這促使更多人成為了飛行員。還有極為重要的一點是，二戰后美國政府為推動私人飛機市場的發展，采取了一系列舉措。首先是引入先進的空中管理系統。

1944年美國民用航空局就計劃成立一可容納50萬架飛機的空管系統，以應對預期爆發的航空業。之后美國政府更開放了空域，將大約85%的空域划分為了民用，并從70年代起將私人飛機主要的活動領域——3000米以下的大多數低空歸為非管制區域。³¹⁾

在這個空域中飛行的私人飛機，無需預交飛行計劃，只需向塔台通報即可飛行，如果沒有塔台的機場，只要在公用頻道中互相通告即可起飛。空域的開放無疑保證并推動了美國通用航空業的高速發展。除此之外，美國各地方政府大力修建了上千個通航小機場，許多前軍用機場轉為民用。這些舉措為美國通航業進入高速發展起到了不可或缺的保證和推動作用。³²⁾

在通航運營中，當遇到法規條款沒有明確規定的事件時，作為局方監察員，出于安全和責任落實的考慮，往往采取法規審查就高不就低的標準。如果在CCAR-91部沒找到標準就往CCAR-135部找，CCAR-135部沒有找到再往CCAR-121部找，這无形中給通航企業的運行設立了很高的門檻，影響了效率。在法規執行的規定中，如果高階法規沒有相關規定，那麼應該向低階基本法規查找相關標準，而不應該向更高階法規尋求標準。否則不僅提高了企業運營的門檻，也增加了局方的監管壓力，同時也不符合國家法律法規執行的原則。只有在《民航法》中明确了類似的法規執行原則，才能有效的提高法規執行效率和落實情況，也在一定程度上給通用航空企業進行了“減負”。為體現通用航空的迅捷、

31) http://3y.uu456.com/bp_3z6k972m9d77xpp57wyk_2.html

32) http://news.ccaonline.cn/Article/2015-1-9/390117_1.shtml

高效、靈活作為交通運輸業的一部分，通用航空業應當形成與公路交通相同或相似的審批與管理程序，通用航空器的購買、注冊應符合法律規定的標準，發給相應的執照，而對飛行員或其他通用航空人員經過考核後發給駕駛證或其他證件，只要航空人員與航空器具有相應合法的證件且在合法的航線飛行，其飛行程序就合法而無需經過其他審批。

4. 安全性原則

通用航空的發展需要以放鬆空域管制為前提條件。放鬆空域管制是一柄雙刃劍，一方面，為通用航空的發展帶來契機，另一方面，也要重視其帶來的公共安全方面的問題和國防利益的問題，在許多空域管制寬松的國家，私人飛機事故並不鮮見。如何平衡中國空域資源得到最大化利用和由此給中國的國家利益和社會安全帶來的潛在威脅，是立法中必須考慮的問題，該問題的處理，將直接關聯到中國通用航空的發展。

通用航空業發達的國家對通用航空作業的安全性都有比較嚴格的規定。如澳大利亞民航安全局（CASA）管理規定指出，非商業用途的無人機操控人員不應在以下場合中操作無人機：距離機場3海里以內；距離地面400英尺以上的管制空域（大城鎮和城市）；人口密集地區上空；距離民衆30米以內；夜晚。³³⁾ 中國對空域實行嚴格管制，理論上所有的飛行不論飛行器大小和用途都需要提前申報飛行計劃。

但由於不熟悉申報流程、難以獲得批准等原因，存在着不小的“黑飛”群體。這些群體的存在，是安全的隱患。³⁴⁾ 另外，保險制度作為安全性的防范和保障性措施，也具有不可替代的作用。以無人機為例，而國內無人機保險方面這塊還有很多空白，經常出現安全事故之後，找不到合理的賠償方式。³⁵⁾ 在制度設計上，保險公司只接受無人機造成人員傷害的意外險，但無人機本身設備的保險，還有完成第三方的責任，以及操作人員的人身安全都應納入到法律保護的範疇之列。

33) <http://www.caac.com.cn/news/61882.html>

34) <http://www.fs0757.com/news/14/1022/155912810552749.htm>

35) http://news.xinhuanet.com/air/2015-03/30/c_127636150.htm

三. 构建統一的法律体系

当前我國通用航空法律体系主要由國家立法、行政法規、民航規章三个層次构成，這三个層次都存在着一定的問題。從國家立法層面看，《中華人民共和國民用航空法》以第十章共六條的形式規範通用航空活動，但內容過於籠統，無法為通用航空法規制定提供科學指引。³⁶⁾ 而《國務院關於通用航空管理的暫行規定》³⁷⁾和《通用航空飛行管制條例》³⁸⁾ 兩部行政法對於促進通用航空產業發展停留在原則層面，保障措施不明確、實施細則有待完善，且無明確指導性意見指引地方性通航政策法規體系建設。

而在民航規章層面，我國現行的11大類共117部适航規章體系中，對通用航空相關規章缺乏針對性和靈活性，技術運行標準及各種證照的頒發、使用，有些是參照公共航空運輸，有些是以通知形式規定或沒有統一規定，在運行管理的嚴密性和運行標準上與國際民航組織的要求仍存在差距。³⁹⁾

目前的當務之急是將通用航空所需規則和要求應分層、分類、分項納入通用航空法律體系中，在下放管理、審批權限的同時加強對地方性法規體系建設的政策指引。建立一套以法律為核心、行政法規、行業規章、實施細則、產業政策和地方法規共同組成的法律法規體系。

修改《民航法》，完善通用航空法律。建議補充和增加下述內容：確立國家對通用航空的扶持政策，改善通用航空發展環境，振興通用航空產業；確立低空空域開放與管理原則；確立通用航空機場建設規劃的原則，如運輸機場建設規劃要兼顧通用航空服務需要；規定通用航空機場建設以及運行保障設施建設制度；通用航空活動主体的基本權利與基本義務；明確通用航空的定義和範圍等。

制定法規《通用航空產業發展條例》。確立國家和地方對通用航空產業的扶持政策，加大財政、金融、稅收、價格等方面的扶持力度。如建立國家和地方對通用航空製造業的研發、製造支持制度，降低通用航空進口關稅、增值稅以及從事農、林等社會公益性項目的通用航空企業的企業所得稅，確定通用航空作業價格

36) 《中華人民共和國民用航空法》以第145—150條

37) 《國務院關於通用航空管理的暫行規定》

38) 《通用航空飛行管制條例》

39) <http://news.carnoc.com/list/308/308693.html>

的原則與管理制度；明確通用航空市場准入原則與經營活動制度；明確通用航空的社會公益性和政府征用的補償原則等。

進一步完善通用航空法律法規和標準體系。簡化企業行政審批手續，降低企業運營的行政成本，拓展盈利渠道和空間。完善通用航空法律法規和標準體系，降低通用航空的准入門檻和運營成本，加強安全監管，進一步鼓勵社會資本投身國內通用航空發展。

加快我國通用航空規章立改廢工作，增強規章協調性和統一性。具體：修訂通用航空市場准入等規章。規範通用航空作業項目分類方式，簡化非經營性通用航空登記手續，推動改進通用航空運行審批程序；完善適合我國通用航空發展特點的空中交通管理運行機制和技術規範；加快制定通勤及其他通用機場的建設標準，規範建設程序；建設低空空域運行管理和服務保障體系；完善通用航空安全監察體系，加強通用航空安全體系建設；完善通用航空人員資質、培訓體系。⁴⁰

參考文獻

楊惠、郝秀輝：《航空法通論》，中國政法大學出版社，2009

董念清：《航空法判例與學理研究》，群眾出版社出版，2001

宗蘇寧：《中國通用航空產業發展現實與思考》，航空工業出版社，2014。

耿建華、王霞等：《通用航空概論》，航空工業出版社，2013。

呂世倫，現代西方法學流派（上冊），中國大百科全書出版社，1999年

羅斯科·龐德，沈宗靈譯，通過法律的社會控制，商務印書館，2010年

杰里·A. 艾肯伯格，陳靜嫻譯，美國通用航空法：法規解析與應用，航空工業出版社，2014

山東省科學技術協會編，通用航空發展問題與思考，北京航空航天大學出版社，2015

康斯坦丁諾斯·達拉馬凱迪斯，基蒙·P. 維拉范尼斯，（德）雷斯·A. 皮爾著 謝海斌等譯，無人機融入國家空域系統，國防工業出版社，2015

40) 王鳳珍：《完善我國通用航空法律法規體系的思考》，中國民航飛行學院學報，2012年第5期。

- 史永胜, 王霞, 耿建華, 通用航空運營与管理, 航空工業出版社, 2007
- 張娜, 王靜, 通用航空發展研究, 中國鐵道出版社, 2013
- John J. Sheehan, 王霞, 朱蓬杰, 覃睿譯, 公務航空運營与管理, 航空工業出版社, 2006
- 王霞, 陳兆鵬, 韓莎莎, 通用航空的基石—FBO, 航空工業出版社, 2014
- 弗斯霍爾(Verschoor-Diederiks), 趙維田譯, 航空法簡介, 中國對外翻譯出版公司, 1987
- ALEXANDER T. WELLS, AIR TRANSPORTATIONA MANAGEMENT PERSPECTIVE (2d ed. 1984).
- Industry, NASA, the FAA, and Universities Join Forces to Revitalize the General Aviation Industry, AGATE FLIER, Aug. 1994
- Dick Koenig, Learn to Program, in General Aviation: Building for the Future on its Strengths & Diversity, 4TH ANNUAL FAA GENERAL AVIATION FORECAST AND CONFERENCE PROCEEDINGS111 (1994)
- Jennifer L. Anton, A Critical Evaluation of the General Aviation Revitalization Act of 1994, AIR L. & COM. (1998)
- Thomas H. Kister, General Aviation Revitalization Act: Its' Effect on Manufacturers, 65 DEF. COUNS. J. (1998)
- Scott E. Tarry & Lawrence J. Truitt, Rhetoric and Reality: Tort Reform and the Uncertain Future of General Aviation, 61 J. AIR L. & COM. (1995).
- William L. Oliver, Jr. & Michael G. Jones, Repose Statute Helps Revitalize an American Industry: the General Aviation Revitalization Act of 1994 (GARA), AVIATION Q. (1997)
- General Aviation Manufacturers Association, Five Year Results: A Report to the President and Congress on the General Aviation Revitalization Act (1999) [hereinafter "Five Year Results"].
- 王鳳珍：完善我國通用航空法律法規体系的思考，中國民航飛行學院學報，2012年第5期。
- 變爽：英美模型飛機規制及其啓示，航空模型，2016年第2期

刁偉民：中國通用航空法律制度及其完善，北京航空航天大學學報(社會科學版)，2009年第2期

欒爽：中國無人機立法回顧與前瞻，無人機，2016年第1期

高啓明：美國通用航空產業發展的經驗剖析及啓示，西安航空學院學報，2013年第6期。

毛振華：通用航空借鑒國外經驗，中外企業文化，2012年第7期

張健等：低空開放對空管的影響及對策分析，中國民航飛行學院學報，2012年第3期。

International Civil Aviation organization (ICAO); <http://www.icao.int>

www.caac.com.cn