

CHAPTER 1



Background

General

A flight dispatcher is a person responsible for planning and monitoring the progress of an aircraft journey. Depending on the type of certification the airline has, and where the airline is based, both the pilot in command and the dispatcher are legally responsible for the safety of a flight. A dispatcher may have the authority to delay, divert or cancel a flight at any time, and a flight might not be able to be released without the signature signed by the pilot in command and the dispatcher under his jurisdiction.

A dispatcher typically must be licensed by the aviation authority of that country. In order to obtain the license, the candidate must demonstrate extensive knowledge of meteorology and aviation in general, to a level comparable to the holder of an airline transport pilot license.

The dispatcher uses sophisticated software tools to monitor the flight's progress and advises the flight crew of any circumstances that might affect flight safety. Shared responsibility adds a layer of checks and balances to aircraft operation and greatly improves safety.

In some jurisdictions of the U.S., the dispatching duties and responsibilities are designated to flight followers. The main difference between a flight dispatcher and a flight follower is that the latter does not share legal responsibility for the operation of a flight. Besides, the follower is not required to attain a flight dispatcher's license, although he is usually encouraged to do so.

At the original period, there is no dispatcher in airline. With the development of the civil aviation, more flights come up and the flight operation becomes very complicated. Then the dispatcher appears. But most of the people have no idea about the dispatcher and the occupation, and the necessary knowledge and skills a dispatcher need to know. Consequently, in this part the general information and something related to dispatch, such as dispatch history both in China and U.S., requirements for being a dispatcher from the point view of the Civil Aviation Administration of China, and dispatcher occupation introduction will be introduced. After getting all these knowledge, you will get a whole figure about dispatch and work for this kind of job.

1.1 History of Dispatch

1.1.1 Dispatch in China

With the development of the economy, the demands of air transportation are becoming more and more tremendous both in domestic and foreign market. The portfolio of airline is too huge to handle in an order, safe, and efficient way without someone who is responsible only for the operation control. The need of dispatcher comes into truth. Just as other occupations, a dispatcher working for operation control and flight release must have working method, procedure and operating instruction. We need to establish regulations and specifications to conduct dispatcher what should do and how to accomplish their missions safely. As is known to us, the most important principles of airline operation are safe, order, and efficient. That is also the reason why the airlines employ dispatcher to manage the flight control. In 1987, Chinese government decided to separate the airline, airport and government according to their function. This policy brings a new type of work–dispatch indirectly. Because the flight operation is becoming more and more complicated and the contest is more intense between different airlines, many airlines employ someone to take charge the business of flight operation. At the beginning, there were only few people engaged into flight control. but now there are a large number of them working in their occupations.

In China, civil aviation is a young industry with a short history. 6 years after Wright Brothers invented aircraft, Chinese inventor Feng Ru made the first aircraft of Chinese own in 1909. And till the opening up policy came into use, the civil aviation of China got a fast and prosperous development. The number of airlines and flight increased amazingly. So for the aim of managing domestic air transportation, the government of China incorporated Civil Aviation Administration of China (CAAC) in 1949. And then CAAC issued CCAR-25 in 1985. In 1990, the first dispatch handbook issued. And after then, the number of dispatcher had a big improvement. With the development of world economy, aviation had a thoroughly change. To get in close touch with the world, CAAC made many new policies to accelerate the development of Chinese civil aviation. More dispatchers contribute to this field. CCAR-121 is a regulation to illustrate whether the certificate holder can meet the airworthiness requirements. CAAC issues CCAR-65 to standard the management of dispatcher license and the agent who award license. There are also many problems that haven't been solved. The technology and equipment we used in practical operation still fall behind Europe and U.S.. Some of the domestic dispatchers cannot make a right and direct decision according to their knowledge and skill. The procedure of the Airline Operations Center (AOC) is too complicated. It is inefficient for airline to accomplish operation mission timely. With the comparison to U.S., our communication system is also behindhand. We cannot organize operation under risk efficiently. Especially in emergency operation and abnormal operation, there are lots of things that we should learn from foreign airlines. Considering this from another angle, that is to say we

should improve the dispatcher's English level for the aim of learning advanced operation skills outside and meet the requirements of internationalization.

All in all, for the aim of keeping in a close step with the international civil aviation, internationalization of China civil aviation is imperative. On one hand, we should improve the technology and equipment of China civil aviation operation. Guarantee that we have no or little problems in operation skills. On the other hand we must improve the level of dispatchers. Try our best to avoid the human factors in practical operation. And to improve the English level of dispatchers is an efficient way for accomplishing this mission. Give dispatchers more opportunities to touch the advanced operation method, making them more and more internationalization is imperative. With the development of the economy, there are more and more air transportations needed. Because of the short history of dispatch in China and the fierce increasing of civil aviation, the shortage of dispatchers will exist in a long period. That is to say, the number of dispatchers will increase in the near future. Due to the opening up policy of China, the standard of dispatcher must be improved to satisfy the need of international aviation transportation market. More and more new international operation methods are taken into practical usage. Foreign language manuals are introduced from CAAC and other international organizations increasingly. Many new overseas en route are opened with the time goes by. Because of the reasons above, dispatchers handling both Chinese and English will be an inevitable tendency.

1.1.2 Dispatch in U.S.

In the United States (U.S.), the term "dispatcher" is fairly generic; there are many types of dispatchers, such as taxi, police, and bus dispatchers. For a U.S. airline to function properly, an airline employee whose job performance is critical is the airline dispatcher. The functions the dispatcher fulfills on a regular basis are demanding and impose a variety of stressors, similar to those experienced by other critical airline employees, day in and day out. The job of the U.S. flight dispatcher plays a major, legal role in the operation of an airline. The primary job of the flight dispatcher is to work within the Airline Operations Center (AOC) and provide for flight safety. Flight dispatcher, working within the AOCs, face intense pressures such as severe time constraints, flight/work overload, in addition to external pressure from their superiors. When poor weather prevails, and other factors compound the situation (e.g., in-flight emergencies), the job of the dispatcher intensifies. Nevertheless, in combination with the Captain, who has direct control of his/her aircraft, the flight dispatcher must play an equally important legal role in the safety of every flight.

In addition to the flight dispatch function, the AOCs typically house numerous other departments; these comprise crew scheduling, some form of maintenance dispatch, load control, and the management and protection of traffic/revenue.

The flight dispatcher is at the heart of coordination of all AOC departments for safe,

efficient flight operations; the workload can be high. At one major U.S. airline, dispatchers may be responsible for handling up to 30 flights at a time. Other major U.S. airlines anecdotally report similar workloads, leading to the generalization that the dispatch function within the AOCs of major airlines can be hectic. The roles of flight dispatcher include additional factors to be discussed during the following investigation.

In light of the fact that there has been a dearth of literature describing the dual mandate of safety and economically efficient performance required of the dispatcher, this qualitative study has explored a variety of operational factors affecting the individuals currently holding airline flight dispatch positions.

The profession of the flight dispatcher has evolved with the many changes that the aviation industry has undergone. In the early stages of aviation, pilots of commercial airlines often had to load mail, passengers, and cargo into their airplanes. There was very little navigation equipment, no communication equipment and there was no way for the airlines to track aircraft in the early days of aviation. Accidents increased over the years, lives were being lost, and a tremendous amount of money was vanishing due to equipment losses.

In 1938, the Congress of the United States passed the Civil Aeronautics Act. This bit of legislation set forth regulations to make certain that all the nations' air carriers operated with the highest degree of safety. One result of this regulatory action was the creation of a new Airman Certificate. The flight dispatcher was created.

The flight dispatcher was and is a ground based, certificated individual who, according to the regulations, shares responsibility with the pilot for the safe conduct of each flight. Today, the concept of shared responsibility for the safe operation of a flight remains a shared responsibility between the captain and the dispatcher. Over the years, flight dispatchers have been known by many names such as aircraft dispatchers and flight superintendents, as well as flight controllers. No matter what the name, the function is the same: ensure compliance with all applicable regulations and pursue the highest possible level of air safety.

The Code of Federal Regulations Title 14 Aeronautics and Space (Title 14CFR) Parts 119 and 121 require all scheduled airlines that have aircraft with more than nine passenger seats, to maintain an appropriate number of dispatch centers staffed by FAA certificated dispatchers. Dispatching has come a long way since the early years of aviation. The industry safety record has spelled it out.

Today, at most U.S. airlines, dispatchers work in a dynamic flow environment within an AOC. [System Operations Control (SOC) and Operations Control Center (OCC) are similar labels for the AOC facility.] The proper functioning of this control center is vital to the smooth operation of the airline. An AOC is the central control point for all daily operational issues involving security, emergencies, weather, aircraft crew coordination, aircraft maintenance routing, and overall operational coordination. A key point to mention about the AOC is that it is not required by regulation; AOCs have been implemented by airlines to improve efficiency.

Flight dispatch is responsible for developing and disseminating the flight plan or dispatch

release. The dispatch release contains all the information a captain needs to operate his/her assigned flight from one city to the next. The 14 CFR Part 121 regulations require a dispatch release.

1.2 Dispatcher Occupation Introduction

1.2.1 General Introduction

Airlines are in business to transport passengers from one place to another. However, without the help of all the staff on the ground, including those who make reservations and sell tickets, to keep the airplane operating on schedule and maintain the aircraft, airlines could not operate in a good condition.

• Position Description

CCAR 121.533 states that both the airline captain and the dispatcher hold full responsibility for the safety of the flight. In cooperation with the pilot, the flight dispatcher furnishes a flight plan that enables the aircraft to arrive at its destination on schedule with the maximum payload and the least operating cost. The flight dispatcher considers en route and destination weather, winds aloft, alternate destinations, fuel required, altitudes, and traffic flow. The dispatcher's signature, along with that of the pilot, releases the aircraft for flight. The dispatcher maintains a constant watch on all flights dispatched, and is responsible in joint agreement with the airline captain for flight planning, route and altitude selection, fuel load requirements, aircraft legality and complying with CCAR regulations. The dispatcher is the go-between for the pilot and ground service personnel, and keeps all personnel concerned with the flight informed about its status. The dispatcher must be familiar with navigation facilities over airline routes and at airports as well as with the take-off, cruising, and landing characteristics of all aircraft operated by the airline. The flight dispatcher also must ride periodically in the cockpit with the flight crew to observe flight routes, conditions, and airports.

1.2.2 Working Conditions

The dispatcher shares 50% decision making and responsibility for the safety of each flight with the airline captain. Flight dispatchers work indoors at the airport in the airline operations office or control center. They use computers, calculators, weather charts and information, and loading reports. A 40-hour week with shift work is normal.

Flight dispatchers frequently work under pressure in a fast-paced environment especially when flying weather is bad. They must make many rapid decisions concerning safety, flight regulations, and the economy of operations. These employees are surrounded by people,

teletype machines, telephones, and intercom systems in a noisy, busy atmosphere. Those who work for a small airline carry on the duties of a meteorologist and schedule coordinator.

CCAR 121 dictates that airline dispatchers must ride in the cockpit jump seat on “familiarization flights” for a minimum of 5 hours each calendar year. However, most airlines treat dispatchers like pilot cockpit crew members, and extend them this excellent privilege on an unlimited basis. Also, hundreds of other airlines around the world recognize the significance of the airline dispatcher, and extend the cockpit jump seat authority freely to them. This is one of the greatest benefits available for dispatchers.

Flight dispatchers must be able to work rotating shifts including days, nights, weekends and holidays.

1.2.3 Duty of Flight Dispatch

1.2.3.1 General Duty

CCAR121-R4 subparts T (flight operations) and U (dispatching) are the most relevant sections concerning operational control. CCAR121.533 in subpart T clearly defines the operational control responsibilities of both the Pilot in Command (PIC) and the Flight Dispatcher. Responsibility for operational control: domestic air carriers are as follows:

- (1) Each domestic air carrier is responsible for operational control.
- (2) The pilot in command and the flight dispatcher are jointly responsible for the preflight planning, delay, and dispatch release of a flight in compliance with this chapter and operations specifications.
- (3) The flight dispatcher is responsible for:
 - (a) Monitoring the progress of each flight;
 - (b) Issuing necessary information for the safety of the flight;
 - (c) Canceling or re-dispatching a flight if, in his opinion or the opinion of the pilot in command, the flight cannot operate or continue to operate safely as planned or released.
- (4) Each pilot in command of an aircraft is, during flight time, in command of the aircraft and crew and is responsible for the safety of the passengers, crew members, cargo, and airplane.
- (5) Each pilot in command has full control and authority in the operation of the aircraft, without limitation, over other crew members and their duties during flight time, whether or not he holds valid certificates authorizing him to perform the duties of those crew members.

It is clear from these regulations that the dispatcher plays a key role in the operation of airlines. For many people, however, the flight dispatcher is a “forgotten airman”. The flight dispatcher is indeed a certificated airman under CCAR Part 65-R2 and is charged with the responsibility for operational control in concert with the PIC: CCAR 65.51 Certificate required. No person may serve as a flight dispatcher (exercising responsibility with the pilot in command

in the operational control of a flight) in connection with any civil aircraft in air commerce unless he has in his personal possession a current flight dispatcher certificate issued under this subpart.

There is often some confusion between the pilot's command authority and the concept of dispatcher and PIC joint responsibility for operational control. It should be clear from CCAR 121.533 that the PIC "has full control and authority in the operation of the aircraft, without limitation..." This does not diminish the dispatcher's responsibility to ensure the conduct of the flight under CCAR Part 121 rules. Just as a mechanic has a responsibility under CCAR that is separate from that of the PIC, the dispatcher, too, has an obligation to perform certain prescribed duties separate from the PIC. Unlike the mechanic, the dispatcher's required duties do not end when the aircraft departs.

1.2.3.2 Duty in Details

To work as a flight dispatcher requires successful completion of about 800 hours or 200 hours of flight dispatcher training (which depends on the operation experience of individual), and an ability to pass the CAAC Oral/Practical Exam and the CAAC Flight dispatcher Computer Knowledge Exam to become licensed. Schools that provide CAAC-approved training in aircraft dispatching are qualified to teach you everything you need to become an active airline dispatcher.

You have joint responsibility with the captain for the safety and operational control of flights under your guidance.

You authorize, regulate and control commercial airline flights according to government and company regulations to expedite and ensure the safety of flight.

You are also responsible for economics, passenger service and operational control of day to day flight operations.

You analyze and evaluate meteorological information to determine potential hazards to safety of flight and to select the most desirable and economic route of flight.

You compute the amount of fuel required for the safe completion of flight according to type of aircraft, distance of flight, maintenance limitations, weather conditions and minimum fuel requirements prescribed by federal aviation regulations.

You prepare flight plans containing information such as maximum allowable take-off and landing weights, weather reports, field conditions, NOTAMS and many other informational components required for the safe completion of flight.

You prepare and sign the dispatch release which is the legal document providing authorization for a flight to depart.

You delay or cancel flights if unsafe conditions threaten the safety of your aircraft or passengers.

You monitor weather conditions, aircraft position reports, and aeronautical navigation

charts to evaluate the progress of flight.

You update the pilot in command of significant changes to weather or flight plan and recommends flight plan alternates, such as changing course, altitude and, if required, en route landings in the interest of safety and economy.

You originate and disseminate flight information to others in his/her company including stations and reservations. This is the source of information provided to the traveling public.

You have undergone extensive training to have earned the coveted flight dispatcher's certificate having taken and passed both extensive oral examination and you comprehensive dispatch knowledge test and oral examination, administered by the Civil Aviation Administration of China.

You participate in frequent and detailed recurrent training courses covering aircraft systems, company operations policy, meteorology and Regulations as required by the CAAC.