



AIR CARRIER OPERATIONS



MARK J. HOLT & PHILLIP J. POYNOR
SECOND EDITION

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Aviation Supplies & Academics, Inc.
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Air Carrier Operations

Second Edition

by Mark J. Holt and Phillip J. Poynor

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Visit the ASA website often, as any updates due to FAA regulatory and procedural changes will be posted there: www.asa2fly.com/textbookupdates

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PREFACE TO THE SECOND EDITION

I confess that in 1901, I said to my brother Orville that man would not fly for fifty years.

—Wilbur Wright, 1908

What's New in the Second Edition?

Whenever a text that has been used successfully for a number of years is offered as a second edition, two questions often arise: “Has very much changed since the first edition?” and: “Do I really need to buy the new book (or can I just use my friend’s old copy)?” In this case, the answer to both of these questions is an emphatic “yes!”

Why? Well, for the first time in decades, the federal government has instituted a major overhaul of airline pilot certification, training standards, pilot rest and flight time/duty time regulations. The catalyst for this change was the 2009 crash of Colgan Air Flight 3407 in Buffalo, New York. This crash gained the attention of the public and Congress, especially when the investigation began to focus on the issues of pilot fatigue, the quality of training and experience levels of the Colgan Air pilots. An aviation rulemaking committee (ARC) was convened by the FAA to make recommendations on how the United States should modify its flight and duty time regulations as well as airline transport pilot (ATP) certification standards. The aviation rulemaking committee consisted of members representing aviation safety organizations, airline trade associations and labor groups.

Since the Colgan crash received so much attention, and with the hope of preventing future accidents, President Obama signed Public Law 111-216, The Airline Safety and Federal Aviation Administration Extension

Act, into law on August 1, 2010. The passage of this law acknowledged the need to finally make the major changes to aviation safety regulations that the National Transportation Safety Board (NTSB), pilot unions and various aviation safety advocates have been recommending for decades.

The Airline Safety and Federal Aviation Administration Act of 2010 (Public Law 111-216, 49 U.S.C. 40101) outlines many new requirements for the improvement of airline safety. We introduce these critical new regulations found in Section 212—Pilot Fatigue, Section 216—Flight Crewmember Screening and Qualifications, and Section 217—Airline Transport Pilot Certification for the first time in this second edition.

The Airline Safety and Federal Aviation Administration Extension Act and the changes to the Federal Aviation Regulations that resulted established many completely new concepts and requirements for the improvement of airline safety. It is important to note that unlike most aviation legislation that simply authorizes the FAA to establish regulations, in this case the effect of Sections 212, 216 and 217 mandates that these things had to be done. The usual discretion was not extended to the FAA in terms of what to do and how to do it. Congress told the FAA to “make it happen” and established a time frame within which it had to complete the process. Had the FAA failed to finish the process on time, the provisions of the law would have then come

into effect as federal statutory law rather than federal regulations, thereby subjecting the carriers strictly to the legal system rather than the less confrontational regulatory structure. With all of this in mind, let's take a look at how to get the most out of the second edition of this book.

Getting the Most Out of This Text

Air Carrier Operations is an entry-level text that introduces the student to the significant regulatory environment impacting airline operations. Although it is primarily intended for use in an air carrier flight operations course, it can be easily adapted for use in a flight dispatcher course, as part of a general air carrier operations management course, or in independent study by an aviation manager seeking a better understanding of air carrier operations. This book is intended primarily for use in university-level courses and for independent study by airline pilot or dispatcher candidates and aviation managers. At this juncture in their career development, they have been exposed to very little of the restrictive regulations that make up modern airline operations. Whether Part 121 airline or Part 135 charter operator, these companies live or die by their compliance with the applicable Federal Aviation Regulations, or FARs (14 CFR). Surprisingly, aviation students are largely unexposed to the layers of regulations in a Part 61 flight-training program or, at best, minimally exposed to them in a Part 141 pilot school.

The purpose of this book, therefore, is to examine the multitude of regulations governing an air carrier. It will focus primarily on Part 121 air carriers, though we necessarily discuss portions of Parts 25, 110, 117, 119 and relevant portions of Parts 135, 91, and 61 of the FARs. We approach this discussion assuming that the student has some background in piloting or maintenance and has been exposed to introductory courses in aviation. These introductory courses are often found in the freshman or sophomore year and have titles such as General Aeronautics or Introduction to Aviation and are often conducted as a private pilot ground school. Due to the nature of air carrier operations, a large portion of this text focuses on instrument flight rules (IFR) flight operations. Consequently, we recommend that flight students complete the instrument rating before undertaking study of this book.

We do not attempt to explain every regulation in all of its nuances. Rather, we try to paint a mosaic that

explains as much the *why* as it does the *what*, leaving the student with a clear understanding of why some of the complex rules are as they are. For this reason, we don't quote excessively from the regulations. Where actual regulation text is provided in the book, it is called out in a different font style for easy identification (with any paraphrased text placed in brackets and italicized). We do try to give the appropriate reference so the student may read it on his or her own, and *it is essential* that the student do this as part of the study of this book. Therefore, the student should acquire a copy of the current FARs that includes at a minimum 14 CFR Parts 1, 61, 91, 110, 117, 119, 121, and 135. These are available from ASA, online at faa.gov, and in various forms from other aviation publishers, including in a subscription format.

When we reference a regulation in the text, it is important that students reference a copy of the regulations and *read the text* of that rule at the same time the explanation is read. That way, they get not only the "big picture" from our text but also the detail and wording from the actual regulation. If there is ever a conflict between our statement of the rule and the actual rule, obviously the rule governs. In addition to learning about that particular rule, students will also develop the skills needed to properly read and interpret the FARs. This is a skill that will surely be needed as students progress further along in their professional careers.

This book is designed to assist students in their first serious foray into the FARs by explaining what something means and why it is done, and then allowing students to get the full meaning of the rule by reading it on their own. At the conclusion of the book, students will have been exposed to the entirety of 14 CFR Part 121 and collateral parts of the FARs. We don't expect an expert level of understanding after one pass through this text. It is reasonable to expect at the conclusion of this book that students should have an appreciation of the variety of regulatory issues involved in air carrier operations and be able to identify the appropriate and applicable regulations pertaining to them. The students should then be able to read the regulations and apply them with an understanding of what is required. With this in mind, it is suggested that any testing in a course based on this text be open book with respect to use of the Federal Aviation Regulations.

We intend this book to be useful as a review or introduction of Part 121 regulations to the airline pilot candidate. Whether the pilot is going for an employment interview or starting an initial training class with a 121

carrier, this book can provide a quick study so the pilot will be better prepared. In recent times due to changes in the hiring process, pilots are going to the airlines with a minimum of 750 to 1,500 flight hours but relatively little to no experience in operations other than flight instruction (or military piloting background). Yet at the same time, design of the initial training programs more or less still assume that pilots have been exposed to this material somewhere. Increasingly, that is not true. Pilots that have not gone through collegiate training programs (e.g., many military pilots or civilian flight school trained pilots) have probably never seen most of the material in this book. This book can enable the pilot to get a head start on the interview process or initial training class. Such pilots should pay particular attention to Chapters 2, 8, 9, 10, 11, and 12 as these chapters are most directly related to the operational issues likely to be asked about in an interview or addressed in the indoctrination and initial training programs.

Organization of the Text

In organizing this text, we decided, for ease of correlation to the FARs, to follow the general layout of the subparts to 14 CFR Part 121. Within the subparts, we intentionally do not attempt to present the rules in numerical order. In some cases that might make sense, but in many others the flow of the material in the FARs is confusing and misleading. We have tried to reorganize the material

so that related rules are discussed at the same time. We want the reader to be able to put the disjointed pieces together and grasp the interrelationships that so often exist in the FARs. For this reason, each chapter pretty much stands on its own. If you are especially interested in a particular area (operational rules, for example), you can go directly to Chapter 12, which covers Subpart T, Operations. Again, for the most part, you can start your journey through this book at any point and end it at any point and still get the full value of the effort expended.

At the end of each chapter you will find a brief summary and list of important terms. The summary gives a condensed view of the chapter and helps you identify important ideas. The list of important terms is organized in alphabetical order and will help in the review of the material to facilitate study for the end-of-chapter exam questions.

If an unfamiliar term is used in the text, check the glossary. We have included a greatly expanded and extensive glossary of new terms that are introduced in the book. If you don't find the term in our glossary, another place you can try is the FAA Pilot/Controller Glossary found in the *Aeronautical Information Manual* (AIM), which is widely available from ASA as well as online at *faa.gov*. Finally, a symbol that may not be familiar to some readers is the “§” symbol. This is used in legislation and legal documents as an abbreviation for the word “section.”

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To all these folks, thanks for your help!

ABOUT THE AUTHORS

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ABBREVIATIONS

AC	advisory circular	CASE	Coordinating Agencies for Suppliers Evaluation
ACARS	automated communication and reporting system	CASS	Cockpit Access Security System
AD(s)	airworthiness directive(s)	CASS	continuing analysis and surveillance system
ADF	automatic direction finder	CDFTRS	crewmember duty and flight time record system
ADI	attitude director indicator	CDL	configuration deviation list
ADS-B	automatic dependent surveillance-broadcast	CFM	company flight manual
A/FD	Airport/Facility Directory	CFR	Code of Federal Regulations
AFGS	automatic flight guidance system	CL	centerline lights
AFM	airplane flight manual	CMP	configuration, maintenance, and procedures document
ALD	available landing distance	CRM	crew resource management
AMOC	alternative method of compliance	CVR	cockpit voice recorder
APU	auxiliary power unit	DA/DH	decision altitude/decision height
AQP	advanced qualification program	DFDR	digital flight data recorder
ARC	Aviation Rulemaking Committee	DHS	Department of Homeland Security
ARINC	Aeronautical Radio, Inc. (commercially subscribed radio frequency)	DME	distance measuring equipment
ARTS	aircrew records tracking system	DMI	deferred maintenance item
ASDA	accelerate/stop distance available	DO	director of operations
ASR	airport standby reserve (flight crew)	DOT	Department of Transportation
ATC	air traffic control	DRM	dispatcher resource management
ATD	aviation training device	EAD	emergency airworthiness directive
ATIS	Airport Terminal Information Services	EAP	employee assistance program
ATP	airline transport pilot	EFB	electronic flight bag
ATP CTP	airline transport pilot certification training program	ETA	estimated time of arrival
CAA	Civil Aviation Authority	ETOPS	extended range twin engine operations
CAB	Civil Aeronautics Board	FCC	Federal Communications Commission
CAMP	continuous airworthiness maintenance program	FCM	flight crew member
		FCOM	flight crew operations manual

FDAR	flight deck access restriction program	MMEL	master minimum equipment list
FDM	flight data monitoring	MNPS	minimum navigation performance standards
FDP	flight duty period	MRO	maintenance repair organization
FDR	flight data recorder	MRO	medical review officer
FFS	full flight simulator	MRR	maintenance reliability report
FL	flight level	MSL	mean sea level
FMC(S)	flight management computer (system)	NAMNPS	North Atlantic Minimum Navigation Performance Standards
FMS	flight management system	NAVAIDS	navigation aids
FOM	flight operations manual	NDB	nondirectional beacon
FOQA	flight operational quality assurance	NFP	non-flying pilot
FP	flying pilot	NOTAMs	Notices to Airmen
FRMS	fatigue risk management system	NPRM	notice of proposed rulemaking
FSDO	flight standards district office	NTSB	National Transportation Safety Board
FSTD	flight simulation training device	NWS	U.S. National Weather Service
FTD	flight training device	OEI	one engine inoperative
FSDO(s)	flight standards district office(s)	OSHA	Occupational Safety and Health Administration
GLS	GPS-based landing system	PA	public address system
GMM	general maintenance manual	PANS-OPS	Procedures for Air Navigation Services—Aircraft Operations (ICAO)
GMT	Greenwich Mean Time	PBE	protective breathing equipment
GOM	general operations manual	PED	personal electronic device
GPS	global positioning system	PF	pilot flying
GPWS	ground proximity warning system	PIC	pilot-in-command (captain)
GSC	ground security coordinator	PM	pilot monitoring
HAA	height above airport	PMI	principal maintenance inspector
HAT	height above touchdown	POI	principal operations inspector
HAZMAT	hazardous material training	RA s	resolution advisories
HGS	heads-up guidance system	RAP	reserve availability period
HIRL	high intensity runway lights	R-ATP	restricted privileges airline transport pilot
ICAO	International Civil Aviation Organization	RCLM	runway centerline markings
IFR	instrument flight rules	RNAV	area navigation
IFSD	inflight shutdown	RNP	required navigation performance
ILS	instrument landing system	RTO	rejected takeoff
IMC	instrument meteorological conditions	RVR	runway visual range
INS	inertial navigation system	RVV	runway visibility value
JAA	European Joint Aviation Authorities	SATCOM	satellite communication system
LAHSO	land and hold short operations	SCR	short-call reserve (flight crew)
LCR	long-call reserve (flight crew)	SD	security directive
LDA	landing distance available	SDF	simplified directional facility
LOA	letter of authorization	SIC	second in command (first officer)
LOC/BC	localizer back course	SIGMET	significant meteorological information
LOFT	line oriented flight training	SM	statute mile
LRCS	long-range communication system	SVT	single visit training
LRNS	long-range navigation system	TAs	traffic alerts
MDA	minimum descent altitude	TAF	terminal area forecast
MEA GAP	gap or break in navigation signals at the minimum enroute altitude	TAWS	terrain awareness and warning system
MEL	minimum equipment list		
MIS	maintenance irregularity summary report		
MLS	microwave landing system		

TC	type certificate
TCAS	traffic alert and collision avoidance system
TERPS	terminal instrument procedures
TOCWS	takeoff configuration warning system
TODA	takeoff distance available
TSA	Transportation Security Administration
ULR	ultra long-range operation
U.S.C.	United States Code
UTC	Universal Coordinated Time
VFR	visual flight rules
VNAV	vertical navigation equipment
VOR	VHF omnirange
VOR/DME	VHF omnidirectional range/distance measuring equipment
VORTAC	VHR omnirange radio/tactical air navigation
WAT	weight-altitude-temperature
WOCL	window of circadian low

INTRODUCTION

Airplane travel is nature's way of making you look like your passport photo.

—Vice President Albert Gore

Before we begin our study of air carriers and their governing operations specifications, we need to review the history of the agency that has the authority to regulate and oversee all aspects of American civil aviation.

The Federal Aviation Administration (FAA)

Historical Origin

The modern age of powered flight began in 1903, when Orville Wright made the first sustained, powered flight on December 17 in an airplane he and his brother, Wilbur, built. The next few decades witnessed a flurry of aviation activity as a number of new and improved aircraft designs from around the world entered service.

During World War I, aircraft production increased dramatically to meet the increased demand for airplanes from military air forces on both sides of the conflict. Most significant was the development of more powerful motors, enabling aircraft to reach speeds more than twice the speed of pre-war aircraft. More power made it possible to build ever larger aircraft.

Though the airplane proved its worth as a military weapon during World War I, attempts to turn the airplane into a successful commercial endeavor ended in failure. The single exception was the delivery of mail by air—airmail. The U.S. government pushed to establish a

postal airmail service across the continental United States. By the mid-1920s, the U.S. Post Office had a fleet of airplanes flying millions of letters annually. This postal flying proved the economic feasibility of airmail. The U.S. Congress then decided to transfer the delivery of airmail to the private sector.

The Contract Air Mail Act of 1925

The **Contract Air Mail Act of 1925** was the first step towards the development of an air carrier industry by allowing the postmaster to contract with private airlines to deliver mail. The initial airmail contracts went to small companies that would grow and go on to pioneer developments in the air carrier industry for decades to come. Also in 1925, a presidential board was created to recommend a national aviation policy. The board recommended that the government establish a regulatory authority to set federal safety standards for civil aviation. The need for such an authority had been recognized for years; however, the numerous bills introduced to the United States Congress attempting to create one were unsuccessful. The air carrier industry activity that began because of the Air Mail Act was minimal, yet this activity, along with requests from industry for federal aviation safety regulations, prompted legislative proposals for an **Air Commerce Act**.

The Air Commerce Act of 1926

The **Air Commerce Act of 1926** charged the Secretary of the Department of Commerce with the responsibility of fostering air commerce, issuing and enforcing air traffic rules, certifying pilots and aircraft, and operating and maintaining air navigation aids. The Act became the cornerstone of the federal government's regulatory authority over civil aviation by establishing a new Aeronautics Branch of the Department of Commerce. This Aeronautics Branch concentrated on functions such as safety rulemaking and the certification of pilots and aircraft.

Bureau of Air Commerce, 1934

Over the next decade, air travel developed from what could be considered a risky endeavor into a crucial mode of transportation for people and products. In 1934, the Aeronautics Branch was renamed the **Bureau of Air Commerce**. As commercial flying increased, the Bureau requested that a group of airlines establish the first air traffic control centers in the United States. In 1936, it was decided that the Bureau of Air Commerce should take over responsibility for controlling en route air traffic, and it began to expand the air traffic control (ATC) system which became its most demanding civil aviation responsibility.

The Federal Register Act of 1935

In 1934, the Supreme Court agreed to hear a case (unrelated to aviation), in which the federal government was trying to enforce an agency regulation against an industrial company. The government later realized that there had been a technical, though inadvertent, revocation of the very regulation in question. Needless to say, the government was very embarrassed by this, and on July 26, 1935, Congress passed the **Federal Register Act of 1935**, requiring all federal regulations to be compiled and published in the *Federal Register*.

This Act was further amended in 1937 to provide for the codification of regulations instead of simply compiling and publishing them. A codification board was established, and it decided the overall structure of the new **Code of Federal Regulations (CFR)**, and assigned the various agencies their own titles. The **Federal Aviation Regulations (FARs)**, as we know them today, are now part of **Title 14 of the Code of Federal Regulations: Aeronautics and Space**. The Federal Register Act established that all federal regulations be codified into a Code of Federal Regulations.

The Civil Aeronautics Act of 1938

In 1938, as a result of a nationally recognized need to improve the disastrous air safety record of the airline industry, the **Civil Aeronautics Act of 1938** was enacted. This Act transferred the federal civil aviation responsibilities from the Department of Commerce to a newly formed **Civil Aeronautics Authority (CAA)**. The CAA was given the additional authority to issue air carrier route certificates and to regulate airline fares. In 1940, President Roosevelt signed a law that divided the CAA into the **Civil Aeronautics Board (CAB)** and the **Civil Aeronautics Administration (CAA)**.

The CAB was given the authority and responsibility for economic and safety regulation and for accident investigations. The CAA was given the responsibility for air traffic control, airman and aircraft certification, safety enforcement, and airway development.

The Federal Aviation Act of 1958

After World War II, the success and rapid growth of air commerce, aviation technology, and the increasing public demand for air services caused the aviation industry to become more complex than the antiquated CAA was able to handle. In addition, with the introduction of jet airliners into service and several horrific midair collisions in 1956 and 1957, the public became concerned about aviation safety issues. For this reason and to address the lack of aviation infrastructure funding, Congress enacted the **Federal Aviation Act of 1958**.

The Act transformed the CAA into an independent agency and renamed it the **Federal Aviation Agency (FAA)**. The FAA was given both the CAA responsibilities of developing and maintaining a federal system of air navigation and air traffic control, *and* the safety and rulemaking functions of the CAB.

The Modern Federal Aviation Administration (FAA)

In 1966, Congress passed legislation authorizing the creation of a cabinet-level department that would combine all the major federal transportation responsibilities. It was also believed that the nation's transportation systems could be managed better by a single department. This new **Department of Transportation (DOT)** officially began operations on April 1, 1967. As part of the new DOT organizational structure, the Federal Aviation Agency was given a new name, the **Federal Aviation Administration**. As part of the reorganization of the FAA, a new, independent accident investigation author-

ity was created: the **National Transportation Safety Board (NTSB)**. The NTSB became the federal government's primary accident investigation agency for not just aviation, but all methods of transportation: highway, rail, marine and pipeline.

On July 5, 1994, the Federal Aviation Act, along with many other transportation-related regulations, was recodified into the format we use today. On that date, the Federal Aviation Act was rescinded and recodified into **Title 49 of United States Code (49 U.S.C.)**. Title 49 of the USC is the code that governs the role of all modes of transportation in the United States.

In this text we will spend most of our time with what we informally call the Federal Aviation Regulations (or FARs), regulations which govern today's aircraft and air carriers. However it is worth noting that **Title 49 of USC, Section 40101**, describes seven basic responsibilities of the FAA, which are summarized below.

1. Assigning, maintaining, and enhancing safety and security as the highest priorities in air commerce.
2. Regulation of air commerce to best promote its development and safety and to fulfill national defense requirements.
3. Promotion, encouragement, and development of civil aeronautics.
4. Control of the use of navigable United States airspace and the regulation of both civil and military operations in that airspace in the interest of the safety and efficiency.
5. Consolidation of air navigation facility research and development, as well as the installation and operation of those facilities.
6. Development and operation of a common air traffic control and navigation system for military and civil aircraft.
7. Providing assistance to law enforcement agencies in the enforcement of laws related to regulation of controlled substances, to the extent consistent with aviation safety.

(49 U.S.C. §40101[d]: Policy)

Since the Air Commerce Act of 1926, we have seen an incredible improvement in the design and capabilities of aircraft. At the same time, we have also seen the steady evolution of the regulatory structure that supports them. Today the Federal Aviation Administration is empowered by the U.S. Congress to promote aviation safety, and issue and enforce regulations dictating the

minimum standards of manufacturing, operating and maintaining aircraft. The FAA also certifies airmen and the airports that serve air carriers.

So far, we've familiarized ourselves with the history of the agency that has the authority to regulate and oversee all aspects of civil aviation the United States. Now let's review a list of FARs that are directly or indirectly related to the governing of air carriers. The following list is made up of those parts you will most likely encounter during the course of your aviation career.

Title 14 of the Code of Federal Regulations (CFR) Related to Air Carriers

Part 1: Definitions and Abbreviations

Part 1 is a glossary of definitions and abbreviations of terms used in the Federal Aviation Regulations. Additional definitions may be found in the text of specific regulations.

Part 21: Certification Procedures for Products and Parts

Part 21 lists the requirements of and the procedures for obtaining type certificates, supplemental type certificates, airworthiness certificates, and import and export approvals.

Part 23: Airworthiness Standards for Normal, Utility, Acrobatic, and Commuter Category Airplanes

Part 23 specifies the airworthiness standards for the issue of type certificates, and changes to those certificates, for airplanes in the normal, utility, acrobatic, and commuter categories. The normal, utility, and acrobatic categories are limited to airplanes that have a seating configuration (excluding pilot seats) of nine or less and a maximum certificated takeoff weight of 12,500 pounds or less. The commuter category is limited to multi-engine airplanes that have a seating configuration (excluding pilot seats) of 19 or less and a maximum certificated takeoff weight of 19,000 pounds or less. The main difference between these categories is the types of flying maneuvers they are allowed to perform. Section 23.3 lists the maneuvers and limits each category is legal to perform.

Part 25: Airworthiness Standards for Transport Category Airplanes

The airworthiness standards for transport category aircraft are found in Part 25. This part contains the standards for issuing of type certificates, and changes to those

certificates, for transport category airplanes. Transport category airplanes are airplanes for which a type certificate is applied for under Part 21 (Certification Procedures for Products and Parts) in the transport category and that meet the transport category airworthiness requirements. Multi-engine airplanes with more than 19 seats or a maximum takeoff weight greater than 19,000 pounds must be certificated in the transport category.

Part 39: Airworthiness Directives

Despite the best efforts of manufacturers' product design and certification testing, unanticipated failures can and do occur. When this happens the FAA issues **airworthiness directives (ADs)**, which are legally enforceable regulations to correct an unsafe condition in an aircraft, engine, propeller, part, or appliance. An airworthiness directive contains measures which become effective and must be accomplished within certain periods of time to preserve the aircraft's airworthiness and restore an acceptable level of safety. An **emergency airworthiness directive (EAD)** is an airworthiness directive issued when an unsafe condition exists that requires immediate action by an aircraft owner or operator. EADs become effective upon receipt of notification.

Part 43: Maintenance, Preventive Maintenance, Rebuilding, and Alteration

This part provides the standard for maintaining the hundreds of thousands of civilian aircraft registered in the United States.

Part 61: Certification of Pilots, Flight Instructors, and Ground Instructors

Part 61 pertains to the certification of pilots, flight instructors, and ground instructors. 14 CFR Part 61 prescribes the eligibility, aeronautical knowledge, flight proficiency, and training and testing requirements for each type of pilot certificate issued.

Part 65: Certification of Airmen Other Than Flight Crewmembers

This part prescribes the requirements for issuing the following certificates and associated ratings and the general operating rules for the holders of those certificates and ratings:

- a. Air traffic control tower operators
- b. Aircraft dispatchers
- c. Mechanics
- d. Repairmen
- e. Parachute riggers

Part 67: Medical Standards and Certification

Part 67 establishes the medical standards and certification procedures for issuing medical certificates for airmen and for remaining eligible for a medical certificate.

Part 91: General Operating and Flight Rules

Part 91 is broad in scope and provides general guidance in the areas of general flight rules, visual flight rules (VFR), instrument flight rules (IFR), aircraft maintenance, and preventive maintenance and alterations.

Part 110: General Requirements (for Air Carrier and Related Operations)

Part 110 provides definitions applicable to various types of air carrier operations and other kinds of commercial operations. Many of the regulatory terms we mention in this text can be found in Part 110.

Part 117: Flight and Duty Limitations and Rest Requirements for Flightcrew Members

This part covers the flight and duty limitations and rest requirements for all flight crewmembers and certificate holders conducting passenger operations under Part 121 of this chapter.

Part 117 also applies to all operations directed by Part 121 certificate holders under Part 91, other than subpart K (Fractional Ownership Operations), of this chapter if any segment is conducted as a domestic passenger, flag passenger, or supplemental passenger operation.

Part 119: Certification of Air Carriers and Commercial Operators

Part 119 applies to each person operating or intending to operate a civil aircraft as an air carrier or commercial operator in air commerce. If common carriage is not involved, Part 119 applies in operations of U.S. registered civil airplanes with a seat configuration of 20 or more passengers, or a maximum payload capacity of 6,000 pounds or more.

Part 120: Drug and Alcohol Testing Program

Part 120 applies to air carriers and operators certificated under Part 119 of this chapter authorized to conduct operations under Part 121 or Part 135 of this chapter.

This part is also applicable to all contracted air traffic control facilities and all operators as defined in 14 CFR §91.147 (passenger carrying flights for compensation or hire).

In addition, Part 120 applies to all individuals who perform, either directly or by contract, a safety-sensitive function listed in subpart E or subpart F of this part. This includes full-time, part-time, temporary, and intermittent employees regardless of the degree of supervision. The safety-sensitive functions are:

- a. Flight crewmember duties
- b. Flight attendant duties
- c. Flight instruction duties
- d. Aircraft dispatcher duties
- e. Aircraft maintenance and preventive maintenance duties
- f. Ground security coordinator duties
- g. Aviation screening duties
- h. Air traffic control duties
- i. All Part 145 repair station certificate holders who perform safety-sensitive functions and elect to implement a drug and alcohol testing program under this part
- j. All contractors who elect to implement a drug and alcohol testing program under this part

Part 121: Operating Requirements of Domestic, Flag, and Supplemental Operations

This part prescribes rules governing the domestic, flag and supplemental operations of each person who holds an air carrier certificate or operating certificate under Part 119.

Part 125: Certification and Operations: Airplanes Having a Seating Capacity of 20 or More Passengers or a Maximum Payload Capacity of 6,000 pounds or More; and Rules Governing Persons on Board Such Aircraft

Part 125 prescribes rules governing the operations of U.S.-registered civil airplanes that have a seating configuration of 20 or more passengers or a maximum payload capacity of 6,000 pounds or more when common carriage is *not* involved.

Part 129: Operations: Foreign Air Carriers and Foreign Operators of U.S.-Registered Aircraft Engaged in Common Carriage

Rules governing the operation within the United States of each foreign air carrier holding permits issued by the U.S. Department of Transportation are found in Part 129.

Part 129 also describes the rules governing operations of U.S.-registered aircraft solely outside of the United States and operations of U.S.-registered aircraft operated solely outside the United States in common carriage by a foreign person or foreign air carrier.

Part 135: Operating Requirements of Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft

Part 135 prescribes the rules governing the commuter or on-demand operations of each person who holds or is required to hold an air carrier certificate or operating certificate under Part 119.

Part 136: Commercial Air Tours

Part 136 applies to each person operating or intending to operate a commercial air tour in an airplane or helicopter and, when applicable, to all occupants of the airplane or helicopter engaged in a commercial air tour.

Part 141: Pilot Schools

This part covers the requirements for issuing pilot school certificates, provisional pilot school certificates, and associated ratings, and the general operating rules applicable to a holder of a certificate or rating issued under Part 141.

Part 142: Training Centers

Part 142 lists the requirements governing the certification and operation of training centers. It provides alternative methods to accomplish training required by a number of other parts of the FARs—especially those related to large airplanes, airlines, charter operations and fractional ownership flying.

Part 145: Repair Stations

This part describes how to obtain a repair station certificate. It also contains the rules a certificated repair station must follow related to its performance of maintenance, preventive maintenance, or alterations of an aircraft, airframe, aircraft engine, propeller, appliance, or component part to which Part 43 applies. It also applies to any person who holds, or is required to hold, a repair station certificate issued under this part.

Part 147: Aviation Maintenance Technician Schools

Part 147 prescribes the requirements for issuing aviation maintenance technician school certificates and associated ratings and the general operating rules for the holders of those certificates and ratings.

Advisory Circulars (ACs)

An advisory circular is a publication offered by the Federal Aviation Administration to provide guidance for compliance with airworthiness regulations. The advisory circular system was developed in 1962 to provide a single, uniform, agency-wide system to deliver advisory material to pilots, mechanics, aviation industry participants, the aviation community, and the public. While, as we've discussed, airworthiness directives are legally enforceable rules, advisory circulars offer instead guidance on what the FAA considers are best policies and procedures for aviation operations.

The subjects of advisory circulars typically involve aircraft, airports, flight schools, pilots, operations, or maintenance personnel. The FAA issues advisory circulars for various reasons from offering policy guidelines to specific safety precautions (eg. notifying pilots of an equipment malfunction or a pertinent rule change).

Summary

This completes the list of the specific parts of the FARs that you will most likely encounter during the course of your aviation career. This large array of materials can be intimidating at times. However, it would in fact be unlikely that someone would need to know all of these sections of the FARs for any single job or area of employment. Depending upon your interests, some sections may well be of more interest than others. Materials included in this text were primarily chosen for their applicability to a commercial airline pilot or dispatcher, or managers of those employee groups. For further research, we recommend using The Office of the Federal Register's online version of the Code of Federal Regulations, the **e-CFR**, which is normally updated within two days after changes that have been published in the *Federal Register* become effective.

Next, in Chapter 1, we will answer the question: What is an air carrier?

Important Terms in the Introduction

- advisory circulars (ACs)
- Air Commerce Act of 1926
- airworthiness directive (AD)
- Bureau of Air Commerce
- Civil Aeronautics Act of 1938
- Civil Aeronautics Administration (CAA)
- Civil Aeronautics Authority (CAA)
- Civil Aeronautics Board (CAB)
- Code of Federal Regulations (CFR)
- Contract Air Mail Act of 1925
- Department of Transportation (DOT)
- e-CFR
- emergency airworthiness directive (EAD)
- Federal Aviation Act of 1958
- Federal Aviation Administration (FAA)
- Federal Aviation Agency (FAA)
- Federal Aviation Regulations (FARs)
- Federal Register Act of 1935
- National Transportation Safety Board (NTSB)
- Title 14 of the Code of Federal Regulations:
 - Aeronautics and Space
- Title 49 of United States Code (49 U.S.C.)
- Title 49 of USC, Section 40101

CHAPTER 1

WHAT IS AN AIR CARRIER?

You cannot get one nickel for commercial flying.

— Inglis M. Upperco

Founder of the first American airline to last more than a couple of months

As we begin this study of air carriers we first need to answer the deceptively simple question: What are **air carriers**? What do they do? How are they different from us flying around in our training airplanes or perhaps our private aircraft? These are the questions we seek to answer in this chapter. We also will introduce the parts of the Federal Aviation Regulations (14 CFR) that apply to air carriers. These regulations will then form the basis for study of the rest of the book.

What Is an Air Carrier?

To understand what is meant by the term “air carrier,” first we must understand what is meant by “term of art.” Then we can understand the phrase “air carrier” as a term of art. A term of art is simply a term that has a meaning beyond that understood by the layman. That is, it has a special meaning within the context of the trade in which it is used. To understand the term “air carrier” we need to look back at several hundred years of British common law theory and principles to understand the concept of carriage. *Black’s Law Dictionary* defines **carriage** as

...Transportation of persons either for pleasure or business,...drawn over the ordinary streets and highways of the country.

In other words, carriage was the simple act of carrying or transporting persons. This concept has been

expanded through the centuries to include carrying or transporting both persons and goods. Early in the development of the concept of carriage, it was discerned that there are different types or levels of carriage. If you take your computer in your car to be repaired, is that carriage? If you take your friend’s computer in your car to be repaired, is that carriage? What if you take your friend to the computer repair shop to pick up the repaired computer, is that carriage? More important, is there any legal difference between these examples?

Private vs. Common Carriage

As British culture developed from a completely agrarian base to more of a centralized and industrial base, the law began to recognize that there were differences in carriage based on the differences in what was being done. In the law of **torts**, which is the law of compensating for civil wrongs, the law developed the concept of **duty to care**. Duty to care is essentially the level of responsibility that a person (or company) has toward others to protect them from harm. As an example, older common law carved out a number of differing levels of duty depending upon the relationship between the people involved and the circumstances surrounding their interaction.

For example, what responsibility do you have toward my car and me if I park it in the lot at your mall? Is that different from the responsibility you have toward my car and me if I park it in your driveway to attend

a party at your house? Further, is that different from the responsibility you have to my car and me if I park it in your pay parking lot? Finally, what if I deliver it to your employee (say a valet in a restaurant) and he or she parks it? Is the responsibility changed? In such situations, British (and later American) common law drew distinctions among these transactions. The law said that in the first example, you have a gratuitous bailment with little (but some degree of) duty to care. A **bailment** is simply where you have handed something that you have a right to possess over to someone else to hold or keep for you. A **gratuitous bailment** is one in which the receiving party derives no benefit from holding the property. He or she is essentially just doing a favor. This concept proceeds along a continuum until in the last two examples the law would hold that you have a **bailment for hire** and therefore a much higher duty to care. Our common law heritage is wonderful at drawing arcane distinctions between very slightly differing sets of facts. In modern times, many courts have eliminated these distinctively different standards of care with respect to bailments, but with respect to carriage the arcane lines of care are still deeply drawn in the sand.

With respect to carriage, the distinction drawn was first between **private carriage** and **public carriage**. Private carriage is that carriage arranged between two parties—the carrier and the carried (or between some other small number of parties and the carrier). In this case, the carrier is simply carrying this small number of persons or property, and it may be *gratuitous* (meaning there is no compensation exchanged for the carriage) or it may be *for hire* (which means money or some other medium of exchange has changed hands). So in the examples above where you were taking your friend or your friend's computer to the repair shop, you have an example of private carriage. If you received no money or other tangible rewards, then you have a *gratuitous private carriage*. On the other hand, if you received money or tangible (or in some cases even intangible) rewards for the carriage, then you have *private carriage for hire*.

Public carriage, on the other hand, implies a willingness to deal with many people who have a need to have something or someone taken someplace. Although it is possible some good Samaritan might do this for free, it is much more likely that the concept of public carriage will apply to someone that is engaging in the business of carrying people or things in hopes of making a dollar. Therefore, we will speak only of *public carriage for hire*. Note that it is not necessary that the person make money

off of the transportation alone for it to be carriage for hire. What if I owned a resort in a very remote location and, as a service to my guests, provided air transportation into and out of the resort? Would that be public carriage for hire or gratuitous public carriage? FAA and NTSB decisions have held that this is public carriage for hire.

Again, looking at this example as a continuum, what lies further out than the above example of the resort operator? What if there was a resort area with many resorts (such as Aspen, Colorado) and you saw an opportunity to make money by starting a bus line (or an airline) to take anyone who wishes from Denver to Aspen. This willingness to take anyone as a public carrier for hire has now moved you the highest level, that of the **common carrier**. *Black's Law Dictionary* defines a common carrier as

...those that undertake to carry all persons (or cargo) indifferently who may apply for passage, so long as there is room and there is no legal excuse for refusal.

In other words, the *common carrier* is a person or company who will carry anyone so long as they have the money to pay the fare (tariff). General indicators of **common carriage** include

- **holding out** to the public of willingness to
- perform **carriage of all comers** (persons or goods)
- from **place to place**
- for **compensation or hire**.

We've dwelt at length on the distinctions between private and common carriage. What difference does it make? The difference is in the liability that the law places on the carrier. Private carriage has some liability. For example, if you injure someone and it can be proved that you were negligent, the injured party may recover damages against you for injuries that you caused. However, if someone were injured in your car through no fault of yours, recovery from you in a lawsuit would be quite difficult to impossible.

On the other hand, as a common carrier, your *duty to care* is much higher. Our common law background has held you to a much higher standard of care that approaches that of an **insurer**. What is an insurer? An insurer is someone who has responsibility to make sure or secure, to guarantee, to ensure safety to anyone covered by that policy. This is done by financial compensation for loss. An insurer is completely responsible financially

for the liability for breeches of safety and security of anyone with whom it has a contract. In analogous fashion, a common carrier is nearly totally responsible for the safety and security of the passengers and freight in its care.

Why is the duty to care so high for a common carrier? Again, the origins are found in the early British common law cases. To understand, picture yourself back in that agrarian British society. Bandits roam the highways (highwaymen). Travel is by horse or stagecoach. In that environment, passengers were truly put at the complete disposal of the carrier. Other than perhaps packing a weapon, passengers could not protect themselves from the various travails and dangers that might lurk along the highways in the course of traveling. Each traveler *had to rely* on the protection of the carrier and its agents. The law therefore placed this responsibility squarely on the shoulders of the carrier. This concept has continued to modern times and forms the conceptual basis for the regulation of the public transportation industries.

Our common carriers, be they taxicabs, buses, trains, boats, or airplanes, are held to the highest standard of care found in tort law. They are virtually insurers of the safety and security of the passengers who entrust their lives and property to the carriers every day. In addition to the responsibility that the civil law (through the torts system) places on the common carrier, the government at its various levels seeks to assure that the common carrier recognizes and lives up to this extraordinary level of duty to care. This is done through any number of regulations under the local, state, and federal regulatory and administrative law systems. For aviation, this takes the form of federal regulation of air carriers by the Federal Aviation Administration, found primarily in Title 14 of the **Code of Federal Regulations (CFR)** (14 CFR), **Parts 1, 61, 63, 65, 91, 110, 117, 119, 121, 135 and 145.**

FAA Tests for Common Carriage

(If it looks like a duck and quacks like a duck...)

Earlier in this section we introduced the four tests to determine common carriage. These are essentially the tests the FAA uses in determining if an individual or company is acting as a common carrier (that is, as an air carrier).

Holding Out to the Public of Willingness to Carry

To be considered a common carrier, the carrier must *hold itself out to the public*. That is, it must let the public know that it is available for carriage. Advertising is not the only way a carrier may hold out to the public, but it

is probably the most common way of doing so. Flyers, notices, and newspaper, television, and radio ads certainly each qualify as a holding out. However, word of mouth, promotions and public appearances by the carrier or its agents stating the willingness of the carrier to carry people or goods are also considered a holding out.

Perform the Carriage of All Comers

We previously discussed that one of the early definitions of common carrier included a willingness to transport anyone. A common carrier is interested in carrying anyone; a private carrier is interested only in limited carriage. There are a number of types of private carriers. One example is a corporate aircraft operated for only one corporation. Another example includes operators that carry automobile parts from the parts manufacturers to the assembly plants. In this case the carrier serves only one contract, namely the carmaker operating the assembly plant.

So, how many contracts may an operator have and remain in private carriage? There is no hard and fast rule, but in FAA Advisory Circular 120-12A, *Private Carriage versus Common Carriage of Persons or Property* (1986), which relates to carriage in large aircraft, the FAA has stated that if an operator is operating as many as three contracts, it will be held to be private carriage. Conversely, the advisory circular says that as few as 18 to 24 contracts are considered to be common carriage. What about four or five contracts? Well, at present, that issue has not been definitively decided, but anyone considering operating more than three private carriage contracts is doing so at considerable peril of being held to the common carriage standards.

From Place to Place

This of course is central to the idea of carriage; that is, you actually take people or goods someplace other than where you started. That's why sightseeing rides aren't generally viewed as common carriage. In a sightseeing flight, no one is carried anywhere.

For Compensation or Hire

Common carriage requires that the person providing the service be hired to provide the service. If there is no hiring, then it is gratuitous private carriage and does not become subjected to regulation as a common carrier. However, hiring can have some very unusual considerations. The first example: "I'll pay you a hundred bucks to take me to Altoona" clearly includes transportation (carriage) for hire (\$100). It's an "exchange thing."

You give me transportation; I'll give you money. Nearly everyone would understand this to be transportation for hire. But what about the following example?

You, an aspiring airline pilot and broke flight student, want to get flight time. You know a lot of your fellow students like to ski, so you put a sign in your dorm bulletin board that reads

WANTED: Skiers to share expenses of flights to ski country. Will take you and one friend to Sugarbush Mountain, Vermont, any weekend. Your share: \$100 each. Call Bella at...

We will see that this will probably be held to constitute common carriage under the FARs. This is one of the many ways small operators can run afoul of the regulations in Part 135 and be found to be common carriers. Students often ask, "But how would the FAA catch this?" The usual enforcement action for this kind of activity normally arises out of one of two situations: a post-accident/incident investigation, or an FAA ramp check at a popular tourist/visitor destination airport. Our concern isn't so much about how you might get caught as it is making sure you understand and are able to comply with the regulations.

FAR Implications of Common Carriage

Before beginning a discussion of the ramifications of regulations on common carriage, we need to look at the structure of the Federal Aviation Regulations. Most commonly referred to as "FARs," they are actually Title 14 of the Code of Federal Regulations (14 CFR). You may have seen references such as 14 CFR §61.105. A pilot would probably refer to this as "Part 61, Section 105," or even more simply as FAR 61.105. 14 CFR is broken down into a number of "parts" such as *Part 61: Pilots and Flight Instructors* or *Part 91: Operating Rules*.

Figure 1-1 illustrates the relationship between multiple parts of the FARs that must be considered in operations of an air carrier. 14 CFR Part 91 is applicable to all operators of any kind of aircraft. The other parts in Figure 1-1 modify, supplement, define or replace the Part 91 general requirements for air carriers. As you can imagine, this creates a set of very stringent requirements for air carriers to manage.

We will begin with a discussion of 14 CFR Part 1: Definitions. Part 1 doesn't define common carrier. That is a term of art carried down through years of British and American common law. It does define air carrier:

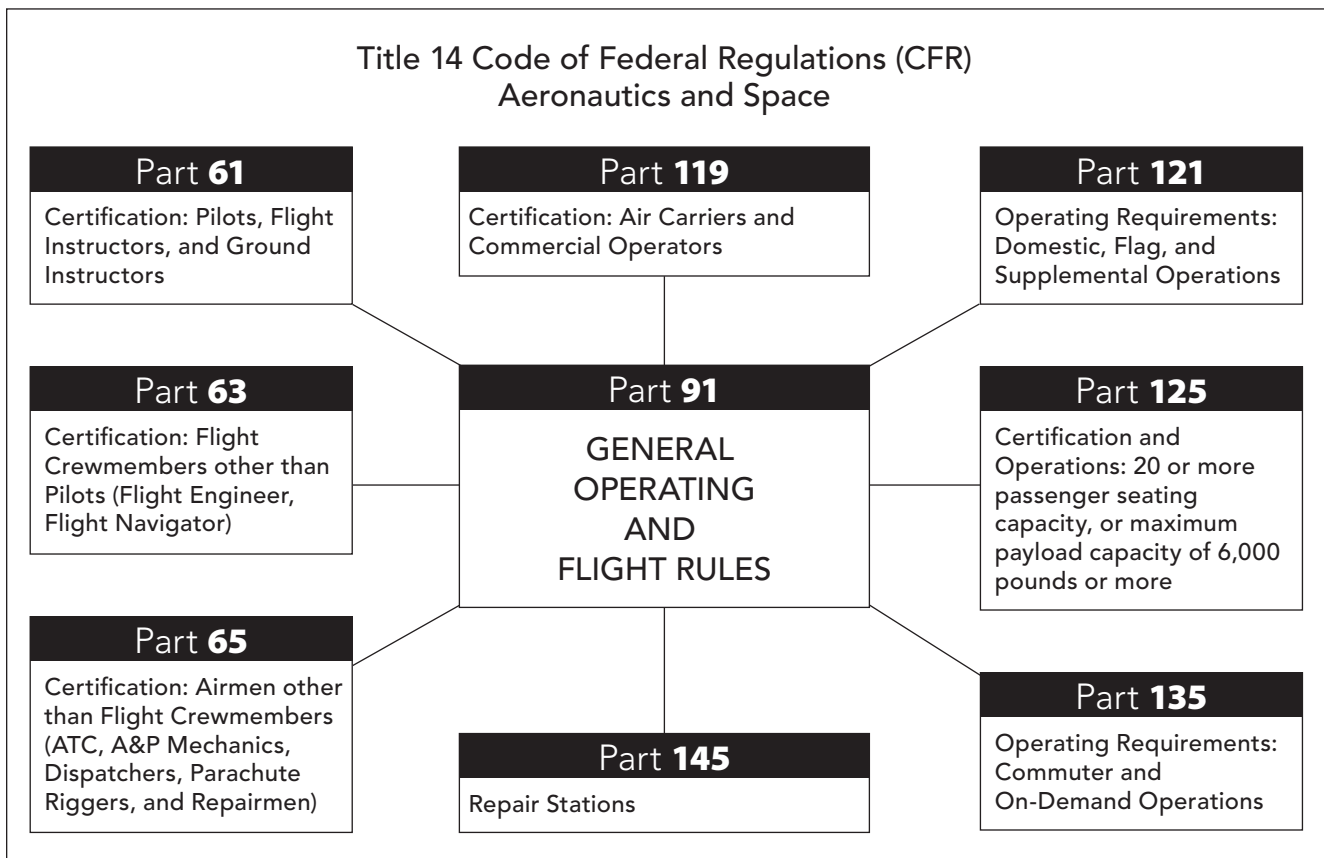


Figure 1-1. Putting the "Parts" Together.