REFERENCE

Army Regulation 95–1

s/s by 1 Sep 1997

Aviation

Flight Regulations

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Headquarters
Department of the Army
Washington, DC
30 May 1990

SUMMARY of CHANGE

AR 95-1
Flight Regulations

This revision--

- Adds the mission symbol "D" for imminent danger (para 2-6b(7)).
- Clarifies passenger restrictions during flight crew training (para 3-3a(4)).
- Requires helmets to be worn by passengers occupying flight crew stations (para 3-11c).
- Requires shoulder harness (when installed) to be worn by passengers (para 3-13a(2)).
- Changes waiver authority for passengers to fly in a flight crew seat in two-pilot aircraft (paras 4-8c and 4-9).
- Changes instrument evaluation requirements for aviators who fly two aircraft categories (para 4-18b(1)(b)).
- Revises requirements for special visual flight rules (VFR) destination weather (para 5-2d(4)).
- Changes VFR requirements for flights outside of controlled airspace (table 5-1).
- Changes flight plan requirements (para 5-2f).
- Provides exception for anticollision lights during night vision devices flights (para 5-3).
- Updates extracts of Federal Aviation Regulation parts 91 and 105 (app B).

Headquarters
Department of the Army
Washington, DC
30 May 1990

*Army Regulation 95–1

Effective 30 June 1990

Aviation

Flight Regulations

This UPDATE printing publishes a revision of this publication. Because the publication has been extensively revised, the changed portions have not been highlighted.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the Secretary of the Army

Summary. This regulation covers aircraft operations, crew requirements, and flight rules. It also includes applicable paragraphs of Federal Avaition Regulation Parts 91 and 105.

Applicability. This regulation applies to all Army aircraft systems and persons involved in the operation of such aircraft and systems. This includes aircraft on loan, lease, and bailment to the Army, the Army National Guard, and the U.S. Army Reserve.

Internal Control System. This regulation is not subject to the requirements of AR 11–2. It does not contain internal control provisions.

Supplementation. Supplementation of this regulation and establishment of command and local forms are prohibited without prior approval of Headquarters, Department of the Army, (DAMO–FDV), WASH DC 20310–0460.

Interim changes. Interim changes to this regulation are not official unless they are authenticated by the Administrative Assistant to the Secretary of the Army. Users will destroy interim changes on their expiration date unless sooner superseded or rescinded.

Suggested improvements. The proponent agency of this regulation is the Office of the Deputy Chief of Staff for Operations and Plans. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, U.S. Army Aviation Center, ATTN: ATZQ–ESO–L, Fort Rucker, AL 36362–5211.

Distribution. Distribution of this publication is made in accordance with the requirements on DA Form 12–09–E, block number 2080, intended for command level A for Active Army, the Army National Guard, and the U.S. Army Reserve.

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Chapter 1
General

1–1. Purpose
This regulation establishes responsibilities, procedures, and rules for aircrew training, standardization, and the operation of Army aircraft.

1–2. References
Required and related publications and prescribed and referenced forms are listed in appendix A.

1–3. Explanation of abbreviations and terms
Abbreviations and special terms used in this regulation are explained in the glossary.

1–4. Responsibilities
a. The Secretary of the Army, or authorized representative (unless otherwise stated in this regulation), has authority for final decisions in Army aviation.

b. The Deputy Chief of Staff for Operations and Plans (DCSOPS) has Staff responsibility for Army aviation.

1–5. Deviations
a. Individuals may deviate from provisions of this regulation during emergencies.

b. Individuals who deviate from the provisions of this regulation, Federal Aviation Administration (FAA), or host country regulations must report details of the incident direct to their unit commander. The incident must be reported within 24 hours after it occurs.

c. Violations of Federal Aviation Regulations (FAR), International Civil Aviation Organization (ICAO), host country, and military aviation regulations will be treated per AR 95–3.

1–6. Waivers and delegation of authority
a. Waivers.

(1) Authority to grant waivers is stated in specific paragraphs of this regulation. This authority may not be delegated to lower commands.

(2) When waiver authority is not specified in specific paragraphs, waivers to provisions in chapters 2, 3, and 5 may only be granted by HQDA (DAMO–FDV); chapter 4 only by HQDA (DAMO–TRS).

b. Delegation of authority. Authority granted to major Army commands (MACOMs) per this regulation may be further delegated by MACOMs.

Chapter 2
Flight Personnel

2–1. Personnel authorized to fly Army aircraft
Procedures for award of aeronautical designations are stated in AR 600–105 and AR 600–106.

a. The following personnel may fly Army aircraft:

(1) Army aviators who—

(a) Are members of the Active and Reserve Components (RC).

(b) Are in aviation service (pilot status Code 1).

(c) Have complied with transition, training, evaluation, and currency requirements of this regulation (chap 4), and AR 95-3, chapter 4, for the aircraft to be flown.

(2) Civilian employees of Government agencies and Government contractors who have—

(a) Appropriate certifications or ratings.

(b) Written authorization from a MACOM; the Commanding General, U.S. Army Aviation Center (USAAVNC); or Chief, National Guard Bureau (CNGB).

(c) Complied with transition, training, evaluation, and currency requirements of this regulation, chapter 4, and AR 95-3, chapter 4, for the aircraft to be flown.

(3) Aviators in other U.S. Services who—

(a) Are in aviation service.

(b) Have complied with transition, training, evaluation, and currency requirements of their service or of this regulation (chap 4), and AR 95-3, chapter 4, for the aircraft to be flown.

(c) Have written authorization from their Service and the MACOM commander.

(4) Aviators of foreign services who—

(a) Have completed the course of instruction prescribed by their Service and have been awarded an aeronautical designation of aviator.

(b) Complied with transition, training, evaluation, and currency requirements of their service or of this regulation (chap 4), and AR 95–3, chapter 4, for the aircraft to be flown.

(c) Have written authorization, including a disclaimer (unless a disclaimer is included under the provisions of an approved exchange program) from their government and the appropriate U.S. Army major command. The MACOM authorization will include, as a minimum, the purpose and duration of the authorization. If authorized to fly, they will be restricted from performing pilot-in-command duties unless serving in approved exchange officer positions established specifically for flying purposes.

(5) Personnel listed in (1) through (4) above who are not qualified or current to operate the aircraft to be flown when receiving training or performing limited cockpit duties per paragraph 2–4. Such operations must be directly supervised by an instructor pilot (IP) or a standardization instructor pilot (SP) who is qualified and current in the aircraft being flown.

(6) Individuals receiving aviator instruction authorized by Headquarters, Department of the Army (HQDA) or HQDA-designated agencies. These people may operate Army aircraft when training under an approved program of instruction (POI) or aircrew training program (ATP).

(7) Flight surgeons or aeromedical physicians' assistants in aviation service when in an aircraft requiring one pilot as a minimum crew. An IP must be at one set of flight controls.

(8) Graduates of the USAAVNC Aerial Observer Course and Field Artillery Aerial Observer (FAAO) Course are authorized to fly scout helicopters when undergoing training per the Aircrew Training Manual Supplement, Aerial Observer. Training must be conducted by a designated IP who is qualified and current in the helicopter being flown and is at one set of flight controls.

b. All Army aviators who are in aviation service per AR 600–105 must meet the annual physical requirements of AR 40–501 regardless of assignment.

2–2. Personnel authorized to run up Army aircraft
a. The following personnel are authorized to start, run up, and taxi airplanes when performing ground maintenance operational checks (MOC).

(1) Personnel listed in paragraph 2–1*a*(1), (2), (3), and (4).

(2) Other personnel who meet the requirements of paragraph 3–17.

b. Personnel listed in *a*(2) above are prohibited from operating helicopters.

c. Contractor personnel operating per AR 95–20, chapter 8, are authorized to start and run up aircraft under the provisions of the contract.

2–3. Aviators prohibited from performing aircrew duty
The following aviators are prohibited from performing aircrew duties:

a. Commissioned officers in nonoperational aviation positions, except per paragraph 2–4 of this regulation and AR 570–4, para 5–14.

b. All those attending nonflying courses of instruction of more than 90 days.

c. Those disqualified, temporarily suspended, or whose aviation service is administratively terminated (AR 600–105).

2–4. Aviators restricted to limited cockpit duty

a. Colonel (06) aviators in nonoperational aviation positions and general officers who hold a U.S. military aeronautical designation may perform cockpit duties on a limited basis as specified in AR 570–4, paragraph 5–14. Officers performing such duties will—

(1) Meet the requirements of AR 570–4, paragraph 5–14g.

(2) Maintain a current flight physical per AR 40–501.

(3) Fly with an IP qualified and current in that aircraft at one set of flight controls.

b. Other ATP, synthetic flight training system (SFTS), and Annual Proficiency and Readiness Test (APART) requirements do not apply to officers performing duties per this paragraph.

c. Officers performing limited cockpit duty do not meet the requirements for a copilot as specified in paragraph 4–9*c* unless they have undergone an instrument flight evaluation per paragraph 4–18*b* in the aircraft category being flown within the 12-month period prior to the flight.

2–5. Aircrew and maintenance checklists

a. The publications and forms required by DA Pam 738–751 will be in each aircraft.

b. Operator and crewmember checklists will be used for before starting engines through shutdown. While airborne, when time may not permit use of the checklist or when its use would cause a hazard to safety, required checks may be from memory.

c. Checklists will be used when making maintenance operational checks, maintenance test flights, and daily inspections.

d. Only DA approved operator's manuals and checklists will be used.

2–6. Logging flying time

An entry will be made on DA Form 2408–12 (Army Aviator's Flight Record) for each flight in aircraft and simulators by all crewmembers indicating duties performed, mission, and flight condition. When recording flight time, use the following symbols:

a. Duty. Use the following symbols to record flight time when performing duties specified by the symbol. Only one aviator occupying a flight crew station may use any one of these symbols for any time period. Aviators instructing or evaluating from a nonflight crew station will use the symbol for the duty being performed.

(1) AO—aerial observer.

(2) CE—crew chief, flight engineer, or aircraft mechanic assigned to a crew chief position.

(3) CP—copilot. This symbol is used only by an aviator who is—

(a) At the copilot station but is not qualified or current in the aircraft being flown, or

(b) Performing copilot duties at other than the copilot station and is undergoing training or evaluations conducted by an IP, SP, IE, UT, or ME. For example: nap-of-the-earth (NOE) navigation, instrument navigation, and so forth.

(4) IE—instrument flight examiner.

(5) IP—instructor pilot.

(6) ME—maintenance test flight evaluator.

(7) MO—flight surgeon or other medical personnel.

(8) MP—maintenance test pilot.

(9) OR—aircraft maintenance personnel, technical observer, fire fighter, aerial photographer, gunner, or duties requiring flight.

(10) PC—pilot in command. This symbol will not be used by a designated pilot in command who is performing assigned duties as IP, SP, UT, IE, ME, MP, or XP. In these cases, the specific symbol will be used to indicate the duty being performed by the pilot in command.

(11) PI—pilot.

(12) SP—standardization instructor pilot.

(13) UT—unit trainer. When this symbol is used, a grade slip must be completed for the aviator undergoing training.

(14) XP—experimental test pilot.

(15) AH–64 flight crews will indicate the station, front seat or back seat, with the letter F or B following the aviator's social security number on DA Form 2408–12.

b. Mission.

(1) A—acceptance test flight.

(2) C—combat mission directly against the enemy within a designated combat zone.

(3) F—maintenance test flight.

(4) S—service missions, other than A, C, F, T, or X.

(5) T—training flight for individual qualification, refresher, mission, or continuation.

(6) X—experimental test flight.

(7) D—imminent danger. Applies when Imminent Danger Special Pay is authorized per Department of Defense (DOD) Pay Manual, chapter 10, section 11007.

c. Flight condition. Each crewmember will use only one of the following symbols to identify the condition or mode of flight for any time period.

(1) AA—air to air.

(2) D—day. Between the hours of official sunrise and sunset.

(3) DG—day goggles. Night vision goggles (NVGs) used during the day.

(4) DS—day vision system. Night vision system installed on aircraft used during the day; also logged when two or more devices are used.

(5) H—hood. Vision of the person flying the aircraft is artificially limited from viewing the horizon or earth surface. Aircraft attitude must be controlled using aircraft instruments.

(6) N—night. Between the hours of official sunset and sunrise.

(7) NG—night goggles. Night vision goggles used during night.

(8) NS—night systems. Night vision system installed on aircraft used during night; also logged when two or more devices are used simultaneously.

(9) TR—terrain.

(10) W—weather. Actual weather conditions that do not permit visual contact with the horizon or earth surface. Aircraft attitude must be controlled using aircraft instruments. This symbol is also used to log instrument time flown in a flight simulator.

2–7. Computation of flying time

Flying time starts when an airplane begins to move forward on the takeoff roll or when a helicopter lifts off the ground. Flying time ends when the aircraft has landed and the engines are stopped or the flying crew changes.

2–8. Individual flight records

Each crewmember must present his or her individual flight records to the unit to which assigned within 14 calendar days after reporting for duty.

Chapter 3
Operations and Safety

Section I
Use of Army Aircraft

3–1. General

Army aircraft will be used for official purposes only. Determination of whether a use is official is a command decision.

3–2. Prohibited missions

a. Army aircraft will not be used to conduct flights for personal use. They will not be used for transportation of personnel or equipment to any place or event in an unofficial capacity.

b. Use of Army aircraft exclusively to obtain or renew a FAA rating is prohibited.

3–3. Passenger restrictions

a. Passengers are restricted from the following types of flights:

(1) Maintenance or engineering test flights.

(2) Aerobatic flights.

(3) Aerial demonstrations.

(4) Flight crew emergency procedures and night vision device (NVD)qualification and refresher training per the Aircrew Training Manual (ATM).

(5) Hazardous flight training.

(6) Aeronautical record attempts.

(7) Aircraft acceptance flights.

b. Personnel on the aircraft during the above operations will be limited to the minimum essential crew and those making evaluations or performing required maintenance checks.

Section II
Safety and Aviation Life Support Equipment (ALSE)

3–4. Safety procedures

a. No person will operate an aircraft in a careless or reckless manner that would endanger life or property.

b. No person will be a crewmember or passenger if his or her physical or psychological condition might be detrimental to safety.

c. Consumption of alcoholic beverages is prohibited on Army aircraft. No person under the influence of intoxicants or narcotics will travel in Army aircraft except—

(1) In an emergency.

(2) As a patient under proper care.

(3) At the discretion of the pilot in command under exceptional circumstances when no compromise of safety is anticipated.

d. The pilot in command will ensure that the following safety measures are observed:

(1) Smoking is prohibited within 50 feet of an aircraft on the ground.

(2) Smoking is prohibited in aircraft.

e. Procedures for packaging, handling, and air transportation of dangerous materials are described in AR 95–27 and AR 55–203. Aircrews assigned to move dangerous materials in Army aircraft will review these publications.

f. Personnel will follow the procedures below when starting engines.

(1) Must be seated at the controls and secured with a seat belt and shoulder harness.

(2) The minimum crew prescribed in helicopter operators' manuals will be used.

g. Only authorized personnel will taxi aircraft.

h. Aircraft must be grounded during fueling, arming, oxygen servicing, and loading or unloading of flammable or explosive cargo. Aircraft will be grounded for maintenance per the appropriate maintenance publications.

i. Refer to FM 1–300 and FM 21–60 for signals to be used to direct and control the operation and movement of aircraft on the ground or at a hover.

3–5. Crew endurance

Crew endurance will be per the unit standing operating procedure.

3–6. DA Form 2696-R

DA Form 2696-R (Operational Hazard Report) will be used to notify commanders and safety councils of anything affecting the safety of Army aircraft or related personnel and equipment. The commander will have reported hazards investigated immediately and will correct unsafe conditions. (See AR 385–95 for instructions on completing DA Form 2696-R.)

3–7. Aircraft safety equipment

Safety equipment will be installed per the appropriate aircraft operator's manual.

3–8. Flight data recorders (FDRs)

FDRs installed on a selected aircraft should be operational for all flights. However, a nonoperational FDR will not result in mission cancellation.

3–9. Oxygen system

See FM 1–301 for restrictions on use of oxygen. Approved oxygen systems will be used as follows:

a. Unpressurized aircraft. Oxygen will be used by aircraft crews and occupants for flights as shown below:

(1) *Aircraft crews.*

(a) On flights above 10,000 feet pressure altitude for more than 1 hour.

(b) On flights above 12,000 feet pressure altitude for more than 30 minutes.

(2) *Aircraft crews and all other occupants.*

(a) On flights above 14,000 feet pressure altitude for any period of time.

(b) For flights above 18,000 feet pressure altitude, oxygen prebreathing will be accomplished by aircrewmembers. Prebreathing may utilize either 100 percent gaseous aviator's oxygen from a high pressure source, or an onboard oxygen generating system (OBOGS) that supplies at least 90 percent oxygen in the inspired gas. Prebreathing will be for not less than 30 minutes at ground level and will continue while en route to altitude. In those extraordinary cases where mission requirements dictate rapid ascent, commanders may authorize shorter prebreathing times on a case-by-case basis, with the realization that such practice increases the risk for developing altitude decompression illness. Return to NORMAL OXYGEN (pressure demand regulator, gaseous oxygen-equipped aircraft) is authorized on descent below 18,000 feet pressure altitude, provided continued flight will not exceed this altitude.

b. Pressurized aircraft.

(1) In flight, cabin pressure altitude will be maintained at or below 10,000 feet.

(2) As a minimum, a 10-minute emergency supply of oxygen will be available to all occupants when the aircraft is above 14,000 feet pressure altitude. Additional emergency oxygen will be on board when factors such as terrain, weather, or fuel consumption prevent descent to 10,000 feet cabin pressure altitude, in the event of depressurization. Above 25,000 feet pressure altitude, oxygen masks will be connected and readily available.

(3) If pressurization is lost in flight above 14,000 feet pressure altitude, descent will be made immediately to a cabin pressure altitude of 10,000 feet or below. Thereafter, the provisions of *a* above apply.

3–10. Parachute requirements

a. Crewmembers will wear parachutes on flights involving aerobatics.

b. Occupants will wear parachutes in all other cases per unit standing operating procedures.

c. The provisions of FAR, Part 105, apply to all Army flights (except emergencies) where parachute drops of persons or things are made from an Army aircraft (see app B).

3–11. Protective clothing and equipment

a. The following U.S. Army approved clothing and equipment will be worn by all crewmembers when performing crew duties:

(1) Leather boots.

(2) Flight helmet.

(3) Flight suit.

(4) Flight gloves.

(5) Cotton, wool, or nomex underwear.

(6) Identification tags.

b. Major Army commanders, numbered Army commanders, CNGB, and CG, USAAVNC may waive the requirements in (1) through (5) above for crewmembers assigned to flights that require other uniforms.

c. Passengers who occupy helicopter flight crew stations in-flight will wear flight helmets. Other passengers will wear approved hearing protection devices.

3–12. Protective masks

a. Either the pilot or copilot will wear a protective mask when fuzed items filled with toxic chemicals are carried in aircraft. Other crewmembers will have protective masks readily available.

b. When incapacitating or toxic chemicals with no arming or fuzing systems are carried in an aircraft, the pilot and copilot need not wear the mask. It will be readily available.

c. All personnel aboard will wear a protective mask when incapacitating or toxic chemicals are dispensed and until the chemical safety officer or other crewmember reports the aircraft is clear of the dispensed agent.

d. Personnel who are not essential to the mission will not be carried in an aircraft with incapacitating or toxic chemicals on board.

3–13. Seat belts and restraints

a. The pilot in command will ensure that—

(1) There are installed seats and seat belts for each passenger on the aircraft.

(2) Passengers can operate seat belts and, if installed, shoulder harness.

(3) Passengers are in seats and restrained by seat belts and, if installed, shoulder harness during takeoffs, landings, and turbulence.

(4) Patients on litters will be restrained by litter-restraining straps during takeoffs, landings, and turbulence.

b. The pilot and copilot will wear a properly adjusted seat belt and shoulder harness when at the controls.

c. Other crewmembers will wear an approved restraining harness instead of seat belts when required by mission.

d. MACOM commanders, CNGB, and general officers may waive the requirements in *a* above for units under their commands during—

(1) Parachute drops.

(2) Rappelling.

(3) Life or death missions.

(4) Water insertions and extractions.

3–14. Aviation life support equipment

a. Aviation life support equipment will be used per unit standing operating procedures and AR 95–3.

b. Army personnel must wear identification tags when flying in Army aircraft.

3–15. Noise abatement

a. Noise-abatement policies will be disseminated by the Director, U.S. Army Aeronautical Services Office (USAASO).

b. Aviators will participate in noise-abatement and fly-neighborly programs to minimize annoyance to persons on the ground when missions and safety are not adversely affected.

Section III
Aircraft Maintenance

3–16. Maintenance test flights (MTFs)

a. Maintenance test flights will be conducted per TM 1–1500–328–25, except for aircraft maintained per FAR.

b. Aviators performing maintenance test flights must be qualified and current per FM 1–544 in mission, type, design, and series group of the helicopter for which the test flight is required. FM 1–544 is advisory only for airplanes.

3–17. Maintenance operational check (MOC)

a. Authorized personnel will perform maintenance operational checks per TM 1–1500–328–25.

b. Personnel who are authorized to start, run up, and taxi airplanes for the purpose of maintenance operational checks and are not qualified per paragraph 2–1*a*(1), (2), or (3) will—

(1) Undergo appropriate normal and emergency procedures training conducted by an IP in the specific mission, type, design, and series aircraft.

(2) Be evaluated semiannually by an IP or ME on all functions he or she is required to perform.

(3) Have written authorization from the commander. This authorization must specify the operations and checks permitted and be posted in the maintenance office.

c. Personnel who are not qualified per paragraph 2–1*a* (1), (2), or (3) are prohibited from starting, running up, or taxiing helicopters.

d. Commanders may authorize nonaviator personnel to start, operate, and stop aircraft auxiliary power units (APUs). These persons will—

(1) Be trained on all functions he or she is authorized to perform.

(2) Have written authorization by the commander.

Chapter 4
Training

Section I
Training

4–1. Aircrew training

Aircrew training will be per the Aircrew Training Program.

4–2. Currency

a. If 60 days have elapsed since the last flight as pilot or pilot in command in the aircraft mission, type, design, and series (or series, group, para 4– 3) to be flown, the aviator will be administered a proficiency flight evaluation per the ATM.

b. Night vision device currency will be per the appropriate ATM.

4–3. Similar aircraft

Series aircraft with similar operating and handling characteristics are grouped below. Currency in any one series aircraft will satisfy the requirement for all aircraft within the series or group. Separate qualification and currency are required for all other aircraft.

a. OV–1A, B, C.
b. OV–1D, RV–1D.
c. U–3A, B.
d. RU/U–21A, B, C, D, E, F, G, H; EU–21A; JU–21A, G.
e. UH–1, B, H, V; EH–1H; EH–1X.
f. UH–1C, M.
g. AH–1S (ECAS) (MOD) (PROD) (MC), TH–1S.
h. CH–47A, B, C, D.
i. AH–1T, J.
j. C–12A, C, D, F, J, L; RC–12D,G.
k. OH–58A, C; TH–57.
l. CH–54A, B.
m. OH–6, OH–8, H500.
n. UH–60, EH–60.
o. C–20E, VC–11A

4–4. Emergency procedures training

Training in emergency procedures will be conducted per ATMs. Training will be in dual controlled aircraft. A qualified IP or SP who is current in that mission, type, design, and series will be at one set of the controls.

a. Airplanes.

(1) Single engine training in multi-engine airplanes may be conducted under the following conditions only:

(a) Complete engine stoppage (propeller or turbine stopped) will be in visual flight rules (VFR) conditions at least 4,000 feet above ground level (AGL).

(b) Simulated engine shutdown on climbout after takeoff may be accomplished if indicated airspeed is at or above the prescribed velocity of safe single engine (VSSE) for that airplane.

(c) The runway used for landing must be at least 4,000 feet long.

(2) Touch-and-go landings may be performed under the following conditions:

(a) Aircraft must have two sets of controls.

(b) IP or SP must be at one set of controls.

(c) Runway used must meet accelerate and stop distance requirements plus 2,000 feet.

(d) Training involving touch-and-go landings must be approved by the unit commander and added to the appropriate ATM.

(e) Simulated single engine operations are not authorized.

b. Helicopters.

(1) Hydraulics-off, autorotations (except from a hover), and antitorque touchdown emergency procedures training in single engine helicopters will be conducted only during aviator and instructor pilot qualification and transition training per formal POI at Department of the Army designated training bases. Touchdown emergency procedures are also authorized for—

(a) IPs designated to conduct touchdown emergency procedures in single engine helicopters at designated training bases.

(b) Directorate of Evaluation and Standardization (DES) IPs.

(c) Local transition training in OH–58A/C and OH–6 helicopters.

(d) IPs designated to conduct touchdown emergency procedures in OH–58A/C and OH–6 helicopters.

(2) Procedures must be conducted in designated training locations free from obstructions. There must be air-to-ground communications and crash and fire rescue equipment available. Night training areas will be designated and used. A method of opening and closing the training area will be established.

(3) Unannounced touchdown autorotations will not be made except for IP training or evaluations.

(4) No more than six practice touchdown autorotations (hovering autorotations are excluded) per pilot or student pilot will be made during any instructional period. This restriction does not apply to IPs or SPs conducting training.

(5) Practice low-level touchdown autorotations may be made at designated training locations under the following conditions:

(a) Approach zones must be clear of obstructions to permit visual contact with the point of landing from autorotation entry to termination.

(b) Entry speeds and altitudes must be as specified in the ATM for the aircraft flown.

(6) Autorotations with power recoveries and terminations with power will be conducted per the ATM.

(7) In multi-engine helicopters, practice touchdown autorotations are prohibited.

Section II
Flight Crewmembers

4–5. Flight crews

Flight crewmembers will be—

a. Designated in writing, by the commander, specifying the duties and flight crew stations that they are authorized to fly.

b. Selected to occupy specific flight crew stations by the aviation unit chain of command, no lower than platoon leader in table of organization and equipment (TOE) units before each flight or series of flights. In table of distribution and allowance (TDA) units, selections will be made by the chain of command or operations officer. Selections will be based on proficiency, mission complexity, crew capability, and other factors bearing on the flight.

c. At the flight crew station specified in paragraph *b* above.

d. Evaluated during APART in the primary aircraft and during each training year in alternate and additional aircraft in each flight crew station where they are authorized to fly.

4–6. Pilot in command (PC)

a. The pilot in command will be—

(1) Responsible and have final authority for operating, servicing, and securing the aircraft he or she commands.

(2) Selected per paragraph 4–5*b* for each flight or series of flights.

(3) Qualified and current in the aircraft mission, type, design, and series.

(4) The UT, IP, SP, IE, or ME when instructing or evaluating at a pilot or copilot station.

(5) Listed in the flight plan or unit operations log.

(6) Responsible for crew and passenger briefings.

(7) Briefed by a commander-designated briefing officer before each mission and brief-back key elements of the mission briefing. UTs, IPs, SPs, MEs, and IEs who are evaluating or instructing from other than pilot or copilot station will participate in the mission briefing and brief-back. A copy of the form used in the mission briefing will be retained in unit files for at least 30 days. DA Form 5484–R (Aircrew Mission Briefing), located in the back of this regulation, may be reproduced locally on 8½- by 11-inch paper.

b. RC rotary-wing aviators who have completed contact and academic training may fly as pilots in command during training missions in VFR conditions during the 1 year authorized for instrument qualifications.

4–7. Air mission commander

When two or more aircraft are operating as one flight, the unit commander will designate an air mission commmander to be in command of all aircraft in the flight. The designation of air mission commander is an assignment of command responsibility and is not a crew duty assignment. Air mission commanders will participate in mission briefings and brief backs.

4–8. Pilot (PI)

a. The pilot, when designated, will be—

(1) Qualified and current in the aircraft mission, type, design, and series.

(2) Briefed by the pilot in command.

(3) Listed on the flight plan or unit operations log.

b. Flight trainees undergoing training and personnel performing limited cockpit duties per paragraph 2–4 may perform pilot duties when an IP is at one set of controls. The IP must be qualified and current in the mission, type, design, and series aircraft being flown.

c. When the operators manual requires a pilot and copilot as minimum crew, two pilots qualified and current in the mission, type, design, and series aircraft to be flown are required. When an IP qualified in the mission, type, design, and series aircraft being flown is at one set of controls, the following additional personnel meet this requirement:

(1) Persons undergoing authorized training.

(2) Personnel performing limited cockpit duties per paragraph 2–4.

(3) Aviation unit commanders, DA Regional Representatives (DARR) to the FAA, and MACOM aviation officers in the grade of 05 and above in operational aviation positions who are not qualified in the aircraft being flown.

(4) Personnel approved by a MACOM (four star level) commander, in writing, when the following conditions have been met:

(a) Flight is for determining the capabilities and/or combat effectiveness of the aircraft.

(b) NVD or NOE flight must be specifically authorized.

(c) Flight will be in VFR conditions.

(d) Simulated emergency procedures will not be conducted.

(e) Flight is approved by the MACOM commander providing the aircraft. If any of the above conditions cannot be complied with, a waiver may be requested per paragraph 1–7*a*.

(5) Authority granted in (3) above will not be further delayed.

4–9. Copilot (CP)

a. The copilot, when designated, will assist in the performance of cockpit tasks as directed by the PC. Except as stated in *b* and *c* below, any aviator may occupy a copilot station and perform designated copilot duties in any aircraft.

b. Two aviators current in the aircraft category being flown are required for flights in forecast instrument meteorological conditions (IMC). Flight trainees meet this requirement when undergoing instrument training and an IP or IE current in the mission, type, design, and series aircraft being flown is at one set of controls. RC aviators who have not completed the required instrument training and evaluation per the ATM will not fly as a crewmember in forecast IMC except when undergoing instrument training with an IP or IE.

c. Requirements in *b* above do not apply to OV–1/RV–1 airplanes.

d. An observer (aviator or nonaviator) designated by the commander is required for all hooded flights.

4–10. Unit trainer (UT)

The unit commander may appoint UTs to conduct specialized training to assist in unit training programs. UTs are prohibited from conducting emergency maneuvers or procedures training in aircraft and evaluating ATM base and special tasks per paragraph 4–17. Commanders may authorize UTs to instruct from pilot, copilot, and/or nonflight crew stations. They may also authorize UTs to validate successful completion of required training; for example, border and corridor qualifications, local area orientation, and other locally directed requirements. When performing UT duties, the UT must be qualified per the appropriate ATM and current in the aircraft being flown.

4–11. Instructor pilot (IP)

a. The IP will train and evaluate aviators and other personnel in designated aircraft per the ATM. IPs who are ME qualified may train and evaluate MPs and other MEs per FM 1–544.

b. At least 500 hours pilot time in an aircraft category is desirable for IPs. Qualified IPs must be designated in writing by the unit commander and be qualified and current in the aircraft to be flown. Commanders may authorize IPs to instruct and evaluate from pilot, copilot, and/or nonflight crew stations.

c. To become qualified as an IP for helicopters or airplanes, an aviator must successfully complete one of the following:

(1) Helicopters.

(a) A DA IP course in the mission, type, and design aircraft in which IP duties are to be performed.

(b) An IP equivalency evaluation administered by an SP selected by HQDA, in the mission, type, and design aircraft in which IP duties are to be performed. Commanders will coordinate with DES, USAAVNC, prior to submitting request for equivalency evaluation to HQDA (DAMO–TRS).

(c) Additional IP qualifications within series group (para 4–3) may be accomplished locally.

(2) Airplanes.

(a) A DA IP course in the aircraft category in which IP duties are to be performed.

(b) An IP equivalency evaluation administered by an SP selected by HQDA in the aircraft category in which IP duties are to be performed. Commanders will coordinate with DES, USAAVNC, prior to submitting a request for equivalency evaluation.

d. The rules in *c* above apply to contractor flight instructors who instruct Department of the Army personnel.

4–12. Instrument flight examiner (IE)

a. The IE will conduct instrument flight training and instrument flight evaluations per the ATM.

b. Qualified IEs must be designated in writing by the unit commander. Commanders may authorize IEs to instruct and evaluate from pilot, copilot, and/or nonflight crew stations.

c. To become qualified as an IE, an aviator must—

(1) Successfully complete a course of instruction for IEs at the USAAVNC, or

(2) Successfully complete an IE equivalency evaluation administered by an IE selected by HQDA. The examinee must be an IP in the aircraft category in which evaluation is conducted. Commanders will coordinate with DES, USAAVNC, prior to submitting a request for equivalency evaluation to HQDA (DAMO–TRS).

4–13. Standardization instructor pilot (SP)

a. The SP will train and evaluate IPs and SPs and have technical supervision of the unit aviation standardization program as specified by the unit commander. He or she advises the commander at all levels of aviation standardization within the command.

b. Qualified IPs will be designated in writing as SPs by unit commanders and be qualified and current in the aircraft to be flown. Commanders may authorize SPs to instruct and evaluate from pilot, copilot, and/or nonflight crew station.

4–14. Maintenance test pilot (MP)

a. Aircraft with test flight procedures published in FM 1–544 will be test flown by qualified maintenance test pilots only.

b. To become qualified as an MP, aviators must successfully complete one of the following:

(1) Maintenance Manager/Maintenance Test Pilot Course (MM/MTPC).

(2) An equivalency evaluation administered by an ME selected by HQDA. Commanders will coordinate with the DES, U.S. Army Aviation Logistics School (USAALS), prior to submitting a request for equivalency evaluation to HQDA (DAMO–TRS).

c. Waivers may be granted on a case-by-case basis through the appropriate MACOM aviation office to HQDA, ATTN: DALO–AV, with information to DAMO–TRS.

d. Qualified MPs will be designated in writing by unit commanders. They must be qualified and current in the aircraft to be flown and meet the standardization requirements of FM 1–544. MPs will comply with procedures in TM 1–1500–328–25.

e. Contractor maintenance test pilots will be qualified by attending a maintenance test pilot course.

4–15. Maintenance test flight evaluator (ME)

a. The ME will conduct maintenance test flight training and maintenance test flight evaluations per FM 1–544.

b. Qualified MPs will be designated in writing as MEs by unit commanders.

c. Commanders may authorize MEs to instruct and evaluate from pilot, copilot, and/or nonflight crew stations.

4–16. Experimental test pilot (XP)

Graduates of the U.S. Naval Test Pilot School who perform experimental and engineering flight tests at the U.S. Army Aviation Engineering Flight Activity (AEFA) and at other facilities authorized by the Department of the Army.

4–17. Publications

The aircraft operators' manuals and checklists are the primary references governing the operation of a specific aircraft. ATM, field manuals, technical manuals, and training circulars will be used as required. When differences exist between other publications and this regulation, this regulation has precedence. DA Forms 2028 (Recommended Changes to Publications and Blank Forms), recommending changes to these publications, will be submitted through the aviation unit commander to the proponent of the manuals.

4–18. Hands-on performance test

Each aviator must successfully complete periodic hands-on performance tests. Specific parts of the test are—

a. Standardization flight evaluation. This flight consists of visual flight maneuvers and procedures conducted in each aircraft mission, type, design, and series group (para 4–3) an aviator is required to operate. The evaluation is conducted to determine the examinee's ability to perform assigned flight duties. The evaluation will—

(1) Consist of the flight evaluation described in the appropriate ATM.

(2) Be conducted by a designated IP or SP to establish initial qualification in an aircraft series and, once each year.

b. Instrument flight evaluation. An instrument flight evaluation will determine examinees ability to perform assigned flight duties under IMC.

(1) The evaluation will be conducted—

(a) Per the appropriate ATM.

(b) Annually, in the examinee's primary aircraft and in an alternate aircraft if dual rated and required to fly both categories. Aviators undergoing evaluations in helicopter and an airplane must be evaluated by an instrument flight examiner in one of the

two categories. Evaluation in the other category may be administered by an IP or SP.

(c) In an aircraft equipped with dual controls by an IE qualified and current in the aircraft category in which the evaluation is conducted. Instructor pilots may conduct instrument flight evaluations in AH–1, AH–64, OH–58, and OH–6 provided they are designated by the commander as an IP in the aircraft being flown, have undergone an instrument flight evaluation in the aircraft category conducted by an IE during APART or Readiness Level (RL) progression, and are current per paragraph 4–2. OV/RV–1 aircraft do not require dual controls. The IE normally functions as either pilot or copilot during the evaluation. Simultaneous evaluations of two aviators may be conducted if both perform the maneuvers and procedures required by the ATM.

(2) The commander may direct use of a compatible flight simulator if circumstances preclude safe, affordable, or timely evaluation in the aircraft.

(3) Unusual attitudes, simulated engine shutdown or engine failures, and autorotations will not be initiated while under IMC. An IE, IP, or SP qualified and current in the aircraft being flown must be at one set of the flight controls when performing these maneuvers.

c. Proficiency flight evaluation. This evaluation is administered to any aviator or nonaviator in any aircraft series group (para 4–3) or aircraft system he or she is required to operate. The evaluation will be conducted—

(1) At the discretion of the commander.

(2) At the direction of HQDA.

(3) By an IP, SP, IE, or ME per the appropriate ATM or FM 1–544.

(4) To determine an individual's proficiency and/or currency.

(5) To determine which phase of training is appropriate for entry into or continuing in the ATP.

d. Post-mishap flight evaluation. This flight evaluation will determine an aviator's ability to perform aviator duties following an aircraft mishap. Aviators with access to flight controls and performing crew duties involved in a Class A or B mishap will be suspended from flight duties until successful completion of a flight evaluation. The evaluation will be conducted in the same mission, type, design, and series aircraft in which the mishap occurred. Aviators with access to flight controls and performing crew duties involved in a Class C mishap may be suspended from flight duties and required to successfully complete a flight evaluation at the discretion of the commander. An IP or SP will conduct the evaluation per the appropriate ATM. (See AR 40–501 for medical requirements.)

e. Medical flight evaluation. This flight evaluation measures an aviator's ability to perform aviator duties. The evaluation will be administered on the recommendation of the flight surgeon when the aviator has incurred a medical disability. The evaluation of flight maneuvers will be conducted by an IP, IE, or SP per the appropriate ATM.

f. Maintenance test flight evaluator and maintenance test pilot evaluation. This evaluation encompasses maintenance test flight maneuvers and is conducted in each aircraft series group (para 4–3) which the aviator is required to test fly. The evaluation will be conducted—

(1) To establish MP or ME qualification per FM 1–544.

(2) By a designated ME qualified and current in the aircraft series group being flown.

(3) During the APART in the primary aircraft and during each training year in alternate and additional aircraft.

Chapter 5
Flight Procedures and Rules

5–1. General

a. Procedures contained in DOD Flight Information Publications (FLIP) and flight rules contained in this regulation will govern the operation of Army aircraft. Specific paragraphs in FAR Part 91, subparts A and B, that do not exempt military aircraft or flight crewmembers apply to flights in the National Airspace System (NAS) and are published in appendix B. When appropriate, ICAO and foreign government rules will apply.

b. DOD FLIP does not provide procedures charts for all airfields that have instrument approach procedures. Required procedure charts may be added to the DOD FLIP by direct contact with the U.S. Army Aeronautical Service Office, Cameron Station, Alexandria, VA 22304–5050, or the U.S. Army Aeronautical Services Detachment (USAASD). Commanders may authorize local procurement of U.S. National Ocean Survey (NOS) charts. Use of commercial or host country products must be approved by either USAASO or an overseas USAASD as a supplement to DOD FLIP, per AR 95–2.

5–2. Preflight

Before beginning a flight, the aircrew will acquaint themselves with mission, procedures, and rules.

a. Planning. The aviator will evaluate aircraft performance, approach and departure data, notices to airmen (NOTAM), and the Army Aviation Flight Information Bulletin.

b. Use of airports and heliports.

(1) Aviators may operate Army aircraft at airports and heliports classified as military Federal Government or public use in DOD or FAA FLIP. Private, closed, or otherwise restricted airports and heliports will be used only with prior permission of appropriate authorities and if the facility is suitable for operations.

(2) Aviators may select landing and takeoff areas when on lifesaving missions or when further flight is inadvisable.

c. Fuel requirements. At takeoff, aircraft must have enough fuel to reach the destination and alternate airport (if required) and have a planned fuel reserve of—

(1) VFR—20 minutes at cruise.

(2) IFR—30 minutes at cruise.

d. Flight weather planning. Pilots will obtain en route, destination, and alternate (if used) weather information before takeoff. The following weather requirements apply:

(1) *Flight into icing conditions.* Aircraft will not be flown into known or forecast severe icing conditions. If a flight is to be made into known or forecast moderate icing conditions, the aircraft must be equipped with adequate deicing or anti-icing equipment.

(2) *Flight into turbulence.* Aircraft will not be intentionally flown into known or forecast extreme turbulence or into known severe turbulence. Aircraft will not be intentionally flown into forecast severe turbulence unless MACOM commanders have established clearance procedures and—

(a) Weather information is based on area forecasts.

(b) Flights will be made in areas where encountering severe turbulence is unlikely.

(c) Flights are for essential training or essential missions only.

(d) Flight approval authorities are specified.

(e) Flights are terminated or depart turbulence if severe turbulence is encountered.

(3) *Flight into thunderstorms.* Aircraft will not be intentionally flown into thunderstorms.

(4) *VFR flight.* Destination weather must be forecast to be equal to or greater than VFR minimums at estimated time of arrival (ETA) through 1 hour after ETA. When there are intermittent weather conditions, predominant weather will apply. Aviators may file flight plans to a destination when weather conditions are forecast to be equal to or greater than *known* special VFR minima for that control zone at ETA through 1 hour after ETA. Outside of controlled airspace, forecast en route weather must permit flight with separation from clouds and flight visibility equal to or greater than minimums stated in table 5–1.

Table 5–1
Army VFR Weather minimums (outside controlled airspace)

Operation	Distance from clouds [1]	Visibility RW	Visibility FW
Day	500 ft. below 1,000 ft. above 2,000 ft. horizontal	1/2 mile	3 miles
Night	500 ft. below 1,000 ft. above 2,000 ft. horizontal	1 mile	3 miles

Notes:
1. Helicopter operating at 1,200 ft. above the ground (regardless of MSL) must remain clear of clouds and must be flown slow enough to allow time to avoid collision with any traffic or obstruction.

(5) *Instrument flight rules (IFR) flight.* Destination weather must be forecast to be equal to or greater than the published weather planning minimum for the approach procedure to be flown at ETA through 1 hour after ETA. When there are intermittent weather conditions, predominant weather will apply. Aviators flying helicopters may reduce destination and alternate Category A visibility minimums by 50 percent, but not less than 1/4 mile or metric equivalent. Reduction of visibility for approaches labeled "COPTER ONLY" is not authorized. Category II approach procedures may not be used in destination or alternate weather planning.

(6) *Area forecast.* If there is no weather reporting service, the aviator may use the area forecast.

(7) *Weather briefing.* Local commanders will establish policies specifying when DD Forms 175–1 (Flight Weather Briefing) are required to be filed with DD Form 175 (Military Flight Plan). Weather information for DD Form 175–1 will be obtained from a military or civil weather facility. If a military forecaster is not available, the pilot in command will obtain a weather forecast from a civil or military air weather facility. A weather forecast will be void 1 hour and 30 minutes from the time the forecast was received provided the aircraft to which it applies has not departed. Weather forecasts may be extended by the pilot in command after coordination with a weather facility.

e. Approval authority. The pilot in command has flight plan approval authority for aircraft under his or her control when performing missions directed by the commander.

f. Flight plan. Aircraft will not be flown unless a flight plan (military or civil) has been filed or an operation's log completed. When FAA Form 7233–1 (Flight Plan), DD Form 1801 (DOD International Flight Plan), or DD Form 175 are used, they will be filed per DOD FLIP. Local commanders will establish policies specifying the flight plan or operations log to be used.

(1) All Army aircraft that are instrumented for IFR flight and are flown by an instrument rated pilot will operate on IFR flight plans except when—

(a) Flight is primarily for VFR training.

(b) Time will not permit mission completion under IFR.

(c) Mission can only be accomplished under VFR.

(d) Excessive air traffic control (ATC) departure, en route, or terminal area delays are encountered.

(e) Hazardous weather conditions must be avoided.

(f) Requirements of paragraph 4–9*b* are not met.

(2) Stopover flight plans are subject to the following provisions:

(a) No change will be made in the pilot in command.

(b) If the original manifest does not list passenger or crew changes at stopover points, changes will be filed with military installation base operations, FAA flight service, or other competent authority.

(3) After departing a nonmilitary airfield, the pilot in command will advise Flight Service Station (FSS) of the departure time.

(4) Locally produced operations logs (FM 1–300) may be used for local flights.

(5) A crew and passenger manifest is required for all flights. For tactical or tactical training flights the passenger manifest will be prepared and retained by the supported unit.

g. Alternate airfield planning. An alternate airfield is required when filing IFR to a destination under any of the following conditions:

(1) Radar is required to execute the approach procedure to be flown.

(2) The instrument approach navigational aids to be used are unmonitored.

(3) The predominant weather at the destination is forecast at ETA through 1 hour after ETA to be less than—

(a) Ceiling 400 feet above the weather planning minimum required for the approach to be flown.

(b) Visibility 1 mile (or metric equivalent) greater than the planning minimum required for the approach to be flown.

(4) An alternate is not required if descent from en route minimum altitude for IFR operation, approach, and landing can be made in VFR conditions.

h. Alternate airfield selection.

(1) An airfield may be selected as an alternate when the worst weather condition for that airfield is forecast for ETA through 1 hour after ETA to be equal to or greater than—

(a) Ceiling 400 feet above the weather planning minimum required for the approach to be flown and visibility 1 mile (or metric equivalent) greater than the weather planning minimum required for the approach to be flown; or

(b) VFR minimums and descent from en route minimum altitude for IFR operation can be made in VFR conditions.

(2) An airfield will not be selected as an alternate except per *h*(1)(*b*) above—

(a) If the approach procedure to be used at the alternate is shown not authorized (NA) in FLIP.

(b) If radar is required for the approach procedure to be used at the alternate.

(c) If the instrument approach navigational aids to be used is unmonitored.

(d) If a control zone does not exist or is not in effect at the airport to be used.

i. Equipment requirements. Minimum equipment required for flight is shown in table 5–2. Minimum equipment and training requirements for category II instrument landing system (ILS) approaches are shown in table 5–3.

j. Weight and balance. The pilot will ensure—

(1) The aircraft is within weight and center-of-gravity limitations for the duration of the flight.

(2) The accuracy of computations on the DD Form 365–4 (Weight and Balance Clearance Form F-Transport) required to verify that the aircraft will remain within weight and center-of-gravity limits throughout the flight.

(3) That sufficient completed DD Forms 365–4 are aboard the aircraft to verify that the weight and center-of-gravity will remain within allowable limits for the entire flight. A single DD Form 365–4 for the specific loading of crew, passengers, cargo, fuel, sling load, and so forth, may be used to satisfy this requirement. Alternatively, several DD Forms 365–4 completed for other loadings also may be used to satisfy this requirement. In this case, the actual loading being verified must clearly be within the extremes of the loading shown on the DD Forms 365–4 used for verification.

Table 5–2
Required equipment

Required equipment [1]	Day	Night	IMC [2, 7]
1. Heading indicator [3]			X
2. Attitude Indicator		X [4]	X
3. Turn and slip indicator			X
4. Airspeed indicator	X	X	X

Table 5–2
Required equipment—Continued

Required equipment [1]		Day	Night	IMC [2, 7]
5.	Pressure altimeter	X	X	X
6.	Vertical speed indicator			X
7.	Magnetic compass [5]	X	X	X
8.	Fuel Quantity Indicating System [6]	X	X	X
9.	Clock or watch with continuous seconds display	X	X	X
10.	Free air temp gauge	X	X	X
11.	Communications equipment	X	X	X
12.	Navigation equipment			X
13.	Transponder			X
14.	Flashlight		X	
15.	Anticollision light system	X	X	X
16.	Position and instrument lights		X	
17.	Landing or search light		X	
18.	Pitot heater			X

Notes:
1. Equipment must be operational and is the minimum required for flight in day, night, or IMC without regard for mission requirements.
2. Items 1 through 6 must be operational at the pilot's station. All vacuum and electrical sources for flight instruments must be operational.
3. Remote indicating compass or gyro heading indicator.
4. Visible horizon may be substituted for attitude indicator.
5. A remote indicating compass or standby compass satisfies the requirement for day or night visual meterological condition (VMC) flight only.
6. Low-quantity caution light not required.
7. Navigation, transponder, and communications equipment must be appropriate to the airspace, airway system, and approach facility to be used, such as, visual omni rante (VOR) approved for airways in the NAS.

5–3. Aircraft lighting

a. Aircraft lighting requirements are as follows:

(1) Anticollision lights will be on when aircraft engines are operating. Exceptions are when—

(a) conducting night vision devices operations.

(b) conditions may cause vertigo.

(c) there may be other hazards to safety.

(2) Position lights will be on bright between official sunset and sunrise.

b. Night vision device lighting requirements will be as prescribed in unit standing operating procedures or training mission orders.

5–4. Departure procedures

a. The aviator flying the aircraft on takeoff who has logged at least 50 hours of actual weather time per DA Form 759 (Individual Flight Record and Flight Certificate - Army) as PC, UT, IP, SP, IE, MP, ME, XP, or pilot (Part II, DA Form 759) has no takeoff minimums. Instrument time flown in a simulator does not apply.

b. The aviator flying the aircraft on takeoff who has not logged at least 50 hours of actual weather time per DA Form 759 as PC, UT, IP, SP, IE, MP, ME, XP, or pilot (Part II, DA Form 759) has the following minimums:

(1) Airplanes—ceiling 200 feet and either visibility 1/2 mile, runway visual range (RVR) 2,400 feet or metric equivalent.

(2) Helicopters—ceiling 100 feet and either visibility 1/4 mile, RVR 1,200 feet or metric equivalent.

(3) RVR may be used when takeoff is made from the runway for which RVR is reported.

c. All aviators will comply with published nonstandard IFR takeoff minimums and departure procedures in flight information publications. The pilot in command may deviate from published nonstandard minimums and procedures if approved by the agency controlling the departure.

d. FAR Part 135 minimums do not apply.

e. Special VFR flights within and departures from control zones are authorized provided ATC clearance is obtained.

5–5. En route procedures

a. Instrument meteorological conditions flight. During IMC flight, all instruments and communication equipment in the cockpit will be kept in the "on" position and immediately available for use.

b. Over-the-top flights. Aircraft will not be flown above a cloud or fog layer under VFR for more than 30 minutes unless—

(1) The aircraft is equipped for IMC flight per table 5–2 and not restricted from IMC flight.

(2) All instrument flight rules and requirements can be met for the remaining flight.

c. Change-of-flight plan. Changes to flight plans will be made per DOD FLIP.

d. Communications.

(1) *IFR.* Reports and radio phraseology will conform to DOD FLIP.

(2) *VFR.* Aviators will continuously monitor appropriate frequencies and make position reports once each hour or as otherwise required.

e. Weather. Weather requirements of table 5–1 apply to VFR flights outside of controlled airspace. When FAA, ICAO, or foreign government rules are more restrictive than table 5–1, they apply.

f. Special-use airspace and combat zone.

(1) AR 95–2 sets Army policy and procedures for handling airspace matters.

(2) Operations in special-use airspace will be conducted per instructions in FAR and FLIP.

(3) In the combat zone, airspace use, control, and management will be conducted per FM 100–103.

g. Overflying National Security Areas. Aviators will avoid overflight of National Security Areas below 2,000 feet above ground level (AGL). Exceptions will be per instructions in DOD FLIP.

5–6. Arrival procedures

a. Holding.

(1) An aviator may request ATC clearance to hold at any time if fuel and alternate requirements can be met.

(2) Holding will be in accordance with DOD FLIP.

b. Approach

(1) Acceptance of charted visual approach clearance is not mandatory.

(2) When an instrument approach is necessary, an approved procedure will be flown. Approved procedures are published by the military services and FAA in DOD and NOS FLIPs.

(3) When published landing visibility minimums require conversion between RVR and miles or metric equivalent, the conversion table in DOD FLIP will be used. RVR is the controlling visibility factor when published and reported for a runway. RVR, however, will not be used with a circling approach.

(4) Dual VOR equipment requirements specified on approach charts do not apply to Army aircraft. Off-tuning from the approach aid to identify an approach fix is authorized. Dual VOR approach minimums apply.

(5) An approach may be initiated, regardless of ceiling and visibility.

(6) Category II ILS approaches in IMC are authorized only when all provisions of table 5–3 are met. Descent on category II ILS approaches is restricted to the highest decision height (DH) published for the procedure selected.

(7) Reported changes in weather conditions during execution of an approach will not restrict continuation of the approach.

(8) Practice hooded approaches may be made to the decision height or minimum descent altitude when the aircraft has dual controls and a copilot is at one set of controls. In all other cases, hooded approaches may not be made lower than the decision height, minimum descent altitude (MDA), or 500 feet AGL, whichever is higher.

(9) Aviators are authorized to use special VFR within control zones provided the weather requirements of FAR 91.107 or applicable host country flight regulations are met and an appropriate ATC clearance has been received.

c. Missed approach. The published missed approach procedure or other procedures as directed by ATC will be flown. Additional approaches may be flown provided fuel, including reserve, is adequate. An ATC clearance must be requested and approved before proceeding to another airfield. A change of flight plan will be made per FLIP if time permits.

d. Traffic patterns.

(1) Airplanes will be flown at 1,500 feet above ground level except when traffic pattern altitudes are prescribed in FLIP.

(2) Helicopter traffic patterns at Army heliports and airfields are normally flown at 700 feet AGL. Exceptions will be as prescribed in FLIP or as directed by ATC. At other airports, helicopters will avoid the flow of airplane traffic.

e. Landing. An aircraft will not be flown below the published MDA or an approach continued below the DH unless the following exist:

(1) The approach threshold of the runway, or the approach lights or other markings, identifiable with the approach end of the runway or landing area, must be clearly visible to the pilot.

(2) The aircraft must be in a position from which a safe approach to the runway or landing area can be made.

f. Closing flight plans. When the flight terminates, the pilot will close his or her flight plan as shown in DOD FLIP.

Table 5–3
Aircraft equipment requirements for category II approaches

Minimum Equipment	Remarks
Single flight director with dual displays (1) and Single Automatic approach coupler (2) or Two independent flight director systems	(1) Single axis authorized if basic glide slope information displayed on same instrument. (2) Split axis authorized.
Instrument failure warning system	Flight crew must have assigned crew duties and procedures to provide immediate detection of essential instrument and equipment failures.
Radar altimeter or inner marker	
Attitude gyros with calibrated pitch markings or Flight director pitch command or Computed pitch command	
Auto throttle system	Required for all turbojets if operations based on dual flight directors and all aircraft using split axis couplers.
Rain removal system	

Aviator evaluation requirements

Pilots in command and copilots will be evaluated by an instrument flight examiner on their ability to perform the maneuvers listed below at least annually for the specific aircraft being flown.

Low Approach system	Maneuvers
1. Dual flight director	Two ILS approaches to 100 feet; from one a landing will be accomplished and from the other a missed approach.
2. Flight director and approach coupler	Two ILS approaches to 100 feet; one using flight director and one using auto coupler; from one a landing will be accomplished and from the other a missed approach.

Notes:

1. Either an aircraft or an approved visual simulator may be used. When accomplished in an aircraft, a hood will be used to simulate the weather. When accomplished in an approved visual simulator, the system must simulate the appropriate category of weather, ceiling and visibility, and be equipped with an appropriate lighting system that depicts the approach and runway lights.

2. Copilots will demonstrate their ability to perform assigned copilot functions.

Appendix A
References

Section I
Required Publications

AR 40–501
Standards of Medical Fitness. (Cited in para 2–1*b*.)

AR 95–2
Air Traffic Control, Airspace, Airfields, Flight Activities, and Navigational Aids. (Cited in para 5–1*b*.)

AR 95–3
General Provisions, Training, Standardization, and Resource Management. (Cited in para 1–6*c*.)

AR 95–20
Contractor's Flight Operations. (Cited in para 2–2*c*.)

AR 570–1
Commissioned Officer Aviation Position Criteria. (Cited in para 2–4*a*.)

AR 600–105
Aviation Service of Rated Army Officers. (Cited in paras 2–1 and 2–4.)

AR 600–106
Flying Status for Nonrated Army Aviation Personnel. (Cited in para 2–1.)

FAR 91
General Operating and Flight Rules. (Cited in para 5–1.)

FAR 105
Parachute Jumping. (Cited in para 3–10.) FAR 135

Air Taxi Operators and Commercial Operators of Small Aircraft. (Cited in para 5–4.)

Federal Aviation Administration publications can be obtained from the local Department of the Army Regional Representatives. See AR 95–2, table 6–1.

FM 1–301
Aeromedical Training for Flight Personnel. (Cited in para 3–9 and 5–5*f*.)

FM 1–544
Standardized Maintenance Test Flight Procedures. (Cited in paras 3–16*b*, 4–11*a*, 4–14, 4–15*a* and 4–18*c*.)

TM 1–1500–328–25
Aeronautical Equipment Maintenance Management Policies and Procedures. (Cited in paras 3–16*a*, 3–17*a*, and 4–14*d*.)

Section II
Related Publications

A related publication is merely a source of additional information. The user does not have to read it to understand this regulation.

AR 10–25
U.S. Army Logistics Evaluation Agency

AR 55–203
Movement of Nuclear Weapons, Nuclear Components, and Related Classified Nonnuclear Material

AR 95–27
Operational Procedures for Aircraft Carrying Hazardous Materials

AR 310–25
Dictionary of United States Army Terms

FM 21–60
Visual Signals

TM 38–250
Packaging and Material Handling: Preparation of Hazardous Materials for Military Air Shipment

Section III
Prescribed Forms

DA Form 759
Individual Flight Record and Flight Certificate—Army. (Prescribed in para 5–4.)

DA Form 5484–R
Aircrew Mission Briefing. (Prescribed in para 4–6.)

Section IV
Referenced Forms

DA Form 2028
Recommended Changes to Publications and Blank Forms

DA Form 2408–12
Army Aviator's Flight Record

DA Form 2696
Operational Hazard Report

DD Form 175
Military Flight Plan

DD Form 175–1
Flight Weather Briefing

DD Form 365–4
Weight and Balance Clearance Form F—Transport

DD Form 1801
DOD International Flight Plan

FAA Form 7233–1
Flight Plan

FAA Form 7233–3
Flight Plan

Federal Aviation Administration forms can be obtained from the local Department of the Army Regional Representatives. See AR 95–2, table 6–1.

Appendix B
Extracts of FAR Parts 91 and 105

FAR Part 91

Subpart A—General

91.1 Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section, this part describes rules governing the operation of aircraft (other than moored balloons, kites, unmanned rockets, and unmanned free balloons) within the United States, including the waters within 3 nautical miles of the U.S. Coast.

(b) Each person operating an aircraft in the airspace overlying the waters between 3 and 12 nautical miles from the coast of the United States shall comply Subpart A, Sections 91.1 through 91.43, and Subpart B of this part.

91.3 Responsibility and authority of the pilot in command.

(a) The pilot in command of an aircraft is directly responsible for and is the final authority as to the operation of that aircraft.
(b) In an emergency requiring immediate action, the pilot in command may deviate from any rule of this subpart or of Subpart B to the extent required to meet that emergency.
(c) Each pilot in command who deviates from a rule under paragraph (b) of this section shall, upon request of the Administrator, send a written report of that deviation to the Administrator.

91.5 Preflight action.

Each pilot in command shall, before beginning a flight, familiarize himself with all available information concerning that flight. This information must include:
(a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which he has been advised by ATC.
(b) For any flight, runway lengths at airports of intended use.

91.6 Category II and III operations: General operating rules.

(c) For the purpose of this section, when the approach procedure being used provides for and requires use of a DH, the authorized decision height is the DH prescribed by the approach procedure, the DH prescribed for the pilot in command, or the DH for which the aircraft is equipped, whichever is higher.
(d) Unless otherwise authorized by the Administrator, no pilot operating an aircraft in a Category II or Category III approach that provides and requires use of a DH may continue the approach below the authorized decision height unless the following conditions are met:
(1) The aircraft is in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing.
(2) At least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:
(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.
(ii) The threshold.
(iii) The threshold markings.
(iv) The threshold lights.
(v) The touchdown zone or touchdown zone markings.
(vi) The touchdown zone lights.
(e) Unless otherwise authorized by the Administrator, each pilot operating an aircraft shall immediately execute an appropriate missed approach whenever prior to touchdown the requirements of paragraph (d) of this section are not met.
(f) No person operating an aircraft using a Category III approach without decision height may land that aircraft except in accordance with the provisions of the letter of authorization issued by the Administrator.

(Amdt. 91–173, 46 FR 2289, Jan. 8, 1981)

91.7 Flight crewmembers at stations.

(a) During takeoff and landing, and while en route, each required flight crewmember shall—
(1) Be at his station unless his absence is necessary in the performance of his duties in connection with the operation of the aircraft or in connection with his physiological needs; and
(2) Keep his seat belt fastened while at his station.

91.8 Prohibition against interference with crewmembers.

(a) No person may assault, threaten, intimidate, or interfere with a crewmember in the performance of the crewmember's duties aboard an aircraft being operated.

91.9 Careless or reckless operations.

No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

91.9 Careless or reckless operation other than for the purpose of air navigation.

No person may operate an aircraft other than for the purpose of air navigation, on any part of the surface of an airport used by aircraft for air commerce (including areas used by those aircraft for receiving or discharging persons or cargo), in a careless or reckless manner so as to endanger the life or property of another.
(b) Except in an emergency, no pilot in command may allow; and no person may make, a parachute jump from an aircraft within the United States except in accordance with Part 105 of this chapter.
(e) For the purposes of this section, "approved parachute" means—
(1) A parachute manufactured under a type certificate or a technical standard order (C–23); or
(2) A personnel-carrying military parachute identified by an NAF, AAF, or AN drawing number, an AAF order number, or any other military designation or specification number.

91.22 Fuel requirements for flight under VFR.

(a) No person may begin a flight in an airplane under VFR unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed—
(1) During the day, to fly after that for at least 30 minutes; or
(2) At night, to fly after that for at least 45 minutes.
(b) No person may begin a flight in a rotocraft under VFR unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 20 minutes.

(Amdt. 91–154, 43 FR 46234, Oct. 5,1978)

91.24 ATC transponder and altitude reporting equipment and use.

NOTE: The provisions of paragraph 91.24(b),(c), and (d) do not apply to Army aircraft that are not equipped with Mode C (automatic pressure altitude encoder) until 1 October 1990.

(b) *All Airspace*: No person may operate an aircraft in the airspace described in paragraphs (b)(1) through (b)(5) of this section,

unless that aircraft is equipped with an operating coded radar beacon transponder having either a Mode 3/A 4096 code capability, replying to Mode 3/A interrogations with the code specified by ATC, or a Mode S capability, replying to Mode 3/A interrogations with the code specified by ATC and intermode and Mode S interrogations in accordance with the applicable provisions specified in TSO–C112, and that aircraft is equipped with automatic pressure altitude reporting equipment having a Mode C capability that automatically replies to Mode C interrogations by transmitting pressure altitude information in 100–foot increments. This requirement applies—

(1) *All aircraft.* In terminal control areas and positive control areas;

(2) *Effective July 1, 1989. All aircraft.* In all airspace within 30 nautical miles of a terminal control area primary airport, from the surface upward to 10,000 feet MSL;

(3) *Effective July 1, 1989.* Notwithstanding paragraph (b)(2) of this section, any aircraft which was not originally certificated with an engine-driven electrical system or which has not subsequently been certified with such a system installed, balloon, or glider may conduct operations in the airspace within 30 nautical miles of a terminal control area primary airport provided such operations are conducted—

(i) Outside any terminal control area and positive control area; and

(ii) Below the altitude of the terminal control area ceiling or 10,000 feet MSL, whichever is lower; and

(4) *Effective December 30, 1990. All aircraft.*

(i) In the airspace of an airport radar service area, and

(ii) In all airspace above the ceiling and within the lateral boundaries of an airport radar service area upward to 10,000 feet MSL; and

(5) All aircraft except any aircraft which was not originally certificated with an engine-driven electrical system or which has not subsequently been certified with such a system installed, balloon, or glider.

(i) In all airspace of the 48 contiguous states and the District of Columbia:

(A) *Through June 30, 1989.* Above 12,500 feet MSL and below the floor of a positive control area, excluding the airspace at and below 2,500 feet AGL.

(B) *Effective July 1, 1989.* At and above 10,000 feet MSL and below the floor of a positive control area, excluding the airspace at and below 2,500 feet AGL.

(ii) *Effective December 30, 1990.* In the airspace from the surface to 10,000 feet MSL within a 10-nautical-mile radius of any airport listed in Appendix D of this part excluding the airspace below 1,200 feet AGL outside of the airport traffic area for that airport.

(c) *Transponder-on operation.* While in the airspace as specified in paragraph (b) of this section or in all controlled airspace equipped with an operable ATC transponder maintained in accordance with 91.172 of this part shall operate the transponder, including Mode C equipment if installed, and shall reply on the appropriate code or as assigned by ATC.

(d) *ATC authorized deviations.* ATC may authorize deviations from paragraph (b) of this section—

(1) Immediately, to allow an aircraft with an inoperative transponder to continue to the airport of ultimate destination, including any intermediate stops, or to proceed to a place where suitable repairs can be made, or both;

(2) Immediately, for operations of aircraft with an operating transponder but without operating automatic pressure altitude reporting equipment having a Mode C capability; and

(3) On a continuing basis, or for individual flights, for operations of aircraft without a transponder, in which case the request for a deviation must be submitted to the ATC facility having jurisdiction over the airspace concerned at least one hour before the proposed operation.

(Secs. 307,313(a), and 601, Federal Aviation Act of 1958, as amended (49 U.S.C. 1348, 1354(a) and 1421); sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

(Doc. No. 9471, Amdt. 91–116, 38 FR 14676, June 4, 1973, as amended by Amdt. 91–123, 39 FR 23254, June 27, 1974, 39 FR 25315, July 10, 1974, 39 FR 26022, July 16, 1974; Amdt. 91–127, 40 FR 16652, Apr. 14, 1975; Amdt. 91–128, 40 FR 27016, June 26, 1975; Amdt. 91–155, 44 FR 15655, Mar 15, 1979; Amdt. 91–158, 44 FR 45922, Aug 6, 1979; Amdt. 91–182, 48 FR 6103, Feb. 10, 1983)

91.36 Data correspondence between automatically reported pressure altitude data and the pilot's altitude reference.

No person may operate any automatic pressure altitude reporting equipment associated with a radar beacon transponder—

(a) When deactivation of that equipment is directed by ATC;

(b) Unless, as installed, that equipment was tested and calibrated to transmit altitude data corresponding within 125 feet (on a 95-percent probability basis) of the indicated or calibrated datum of the altimeter normally used to maintain flight altitude, with that altimeter referenced to 29.92 inches of mercury for altitudes from sea level to the maximum operating altitude of the aircraft; or

(c) After September 1, 1979, unless the altimeters and digitizers in that equipment meet the standards in TSO–C10b and TSO–C88, respectively.

(Secs. 604 and 605, Federal Aviation Act of 1958 (49 U.S.C. 1423, 1424, and 1425); and sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

(Amdt. 91–42, 32 FR 8893, June 22, 1967, as amended by Amdt. 91–141, 42 FR 36973, July 18, 1977; Amdt. 91–154, 43 FR 46234, Oct 5, 1978)

91.57 Aviation Safety Reporting Program; prohibition against use of reports for enforcement purposes.

The Administrator of the FAA will not use reports submitted to the National Aeronautics and Space Administration under the Aviation Safety Reporting Program (or information derived therefrom) in any enforcement action, except information concerning criminal offenses or accidents which are wholly excluded from the program.

(Secs. 313(a), 601 and 603, Federal Aviation Act of 1958 (49 U.S.C. 1354, 1421 and 1423); sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

Subpart B—Flight Rules

General

91.61 Applicability.

This subpart prescribes flight rules governing the operation of aircraft within the United States and within 12 nautical miles from the coast of the United States.

91.63 Waivers

(a) The Administrator may issue a certificate of waiver authorizing the operation of aircraft in deviation of any rule of this subpart if he finds that the proposed operation can be safely conducted under the terms of that certificate of waiver.

(b) An application for a certificate of waiver under this section is made on a form and in a manner prescribed by the Administrator and may be submitted to any FAA office.

(c) A certificate of waiver is effective as specified in that certificate.

91.65 Operating near other aircraft.

(a) No person may operate an aircraft so close to another aircraft as to create a collision hazard.

(b) No person may operate an aircraft in formation flight except by arrangement with the pilot in command of each aircraft in the formation.

(d) Unless otherwise authorized by ATC, no person operating an aircraft may operate his aircraft in accordance with any clearance or instruction that has been issued to the pilot of another aircraft for radar Air Traffic Control purposes.

(Doc. no. 1580, Amdt. 1–1, 28 FR 6704, June 29, 1963, as amended by Amdt. 91–8, 29 FR 14404, Oct. 20, 1964)

91.67 Right-of-way rules; except water operations.

(a) *General.* When weather conditions permit, regardless of whether an operation is conducted under Instrument Flight Rules or Visual Flight Rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft in compliance with this section. When a rule of this section gives another aircraft the right of way, he shall give way to that aircraft and may not pass over, under, or ahead of it, unless well clear.

(b) *In distress.* An aircraft in distress has the right of way over all other air traffic.

(c) *Converging.* When aircraft of the same category are converging at approximately the same altitude (except head-on, or nearly so) the aircraft to the other's right has the right of way. If the aircraft are of different categories—

(1) A balloon has the right of way over any other category of aircraft;

(2) A glider has the right of way over an airship, airplane or rotorcraft; and

(3) An airship has the right of way over an airplane or rotorcraft.

However, an aircraft towing or refueling other aircraft has the right of way over all other engine-driven aircraft.

(d) *Approaching head-on.* When aircraft are approaching each other head-on, or nearly so, each pilot of each aircraft shall alter course to the right.

(e) *Overtaking.* Each aircraft that is being overtaken has the right of way and each pilot of an overtaking aircraft shall alter course to the right to pass well clear.

(f) *Landing.* Aircraft, while on final approach to land, or while landing, have the right of way over other aircraft in flight or operating on the surface. When two or more aircraft are approaching an airport for the purpose of landing, the aircraft at the lower altitude has the right of way, but it shall not take advantage of this rule to cut in front of another which is on final approach to land, or to overtake that aircraft.

(g) *Inapplicability.* This section does not apply to the operation of an aircraft on water.

(Doc. No. 1580, Amdt. 1–1, 28 FR 6704, June 29, 1963, as amended by Amdt. 91–55, 33 FR 10505, July 24, 1968)

91.69 Right-of-way rules; water operations.

(a) *General.* Each person operating an aircraft on the water shall, insofar as possible, keep clear of all vessels and avoid impeding their navigation, and shall give way to any vessel or other aircraft that is given the right of way by any rule of this section.

(b) *Crossing.* When aircraft, or an aircraft and a vessel are on crossing courses, the aircraft or vessel to the others right has the right of way.

(c) *Approaching head-on.* When aircraft, or an aircraft and a vessel, are approaching head-on or nearly so, each shall alter its course to the right to keep well clear.

(d) *Overtaking.* Each aircraft or vessel that is being overtaken has the right of way, and the one overtaking shall alter course to keep well clear.

(e) *Special circumstances.* When aircraft, or an aircraft and a vessel, approach so as to involve risk of collision, each aircraft or vessel shall proceed with careful regard to existing circumstances, including the limitations of the respective craft.

91.70 Aircraft speed.

(a) Unless otherwise authorized by the Administrator, no person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots (288 m.p.h.).

(b) Unless otherwise authorized or required by ATC, no person may operate an aircraft within an airport traffic area at an indicated airspeed of more than—

(1) In the case of a reciprocating engine aircraft, 156 knots (180 m.p.h.); or

(2) In the case of a turbine-powered aircraft, 200 knots (230 m.p.h.).

Paragraph (b) of this section does not apply to any operations within a Terminal Control Area. Such operations shall comply with paragraph (a) of this section.

(c) No person may operate an aircraft in the airspace underlying a terminal control area, or in a VFR corridor designated through a terminal control area, at an indicated airspeed of more than 200 knots (230 m.p.h.).

However, if the minimum safe airspeed for any particular operation is greater than the maximum speed prescribed in this section, the aircraft may be operated at that minimum speed.

(Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

(Doc. No. 13543, Amdt. 91–47, 32 FR 15709, Nov. 15, 1967, as amended by Amdt. 91–78, 35 FR 7784, May 21, 1970; Amdt. 91–113, 38 FR 8135, Mar. 29, 1973; Amdt. 91–125, 39 FR 26888, July 24, 1974)

91.71 Acrobatic flight.

No person may operate an aircraft in acrobatic flight—

(a) Over any congested area of a city, town, or settlement;

(b) Over an open air assembly of persons;

(c) Within a control zone or Federal Airway;

(d) Below an altitude of 1,500 feet above the surface; or

(e) When flight visibility is less than three miles.

For the purposes of this section, acrobatic flight means an intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight.

(Doc. No. 1580, Amdt. 1–1. 28 FR 6704, June 29, 1963, as amended by Amdt. 91–6, 29 FR 9823, July 22, 1964, Amdt. 91–65, 34 FR 12883, Aug. 8, 1969; Amdt. 91–65, 34 FR 13467, Aug. 21, 1969)

91.73 Aircraft lights.

No person may, during the period from sunset to sunrise (or, in Alaska, during the period a prominent unlighted object cannot be seen from a distance of three statute miles or the sun is more than six degrees below the horizon)—

(a) Operate an aircraft unless it has lighted position lights;

(b) Park or move an aircraft in, or in dangerous proximity to, a night flight operations area of an airport unless the aircraft—

(1) Is clearly illuminated;

(2) Has lighted position lights; or

(3) Is in an area which is marked by obstruction lights.

(c) Anchor an aircraft unless the aircraft—

(1) Has lighted anchor lights; or

(2) Is in an area where anchor lights are not required on vessels; or

(d) Operate an aircraft, required by 91.33(c)(3) to be equipped with an anticollision light system, unless it has approved and lighted aviation red or aviation white anticollision lights. However, the anticollision lights need not be lighted when the pilot in command determines that, because of operating conditions, it would be in the interest of safety to turn the lights off.

(Doc. No. 1580, Amdt. 1–1, 28 FR 6704, June 29, 1963, as amended by Amdt. 91–152, 43 FR 22640, May 25, 1978)

91.75 Compliance with ATC clearances and instructions.

(a) When an ATC clearance has been obtained, no pilot in command may deviate from that clearance, except in an emergency, unless he obtains an amended clearance. However, except in positive controlled airspace, this paragraph does not prohibit him from cancelling an IFR flight plan if he is operating in VFR weather conditions. If a pilot is uncertain of the meaning of an ATC clearance, he shall immediately request clarification from ATC.

(b) Except in an emergency, no person may, in an area in which air traffic control is exercised, operate an aircraft contrary to an ATC instruction.

(c) Each pilot in command who deviates, in an emergency, from an ATC clearance or instruction shall notify ATC of that deviation as soon as possible.

(d) Each pilot in command who (though not deviating from a rule of this subpart) is given priority by ATC in an emergency, shall, if requested by ATC, submit a detailed report of that emergency within 48 hours to the chief of that ATC facility.

91.77 ATC light signals.

ATC light signals have the meaning shown in the following table:

Color and type of signal	Meaning with respect to aircraft on the surface	Meaning with respect to aircraft in flight
Steady green	Cleared for take-off	Cleared to land.
Flashing green	Cleared to taxi	Return for landing (to be followed by steady green at proper time).
Steady red	Stop	Give way to other aircraft and continue circling.
Flashing red	Taxi clear of runway in use.	Airport unsafe—do not land.
Flashing white	Return to starting point on airport.	Not applicable.
Alternating red and green.	Exercise extreme caution.	Exercise extreme caution.

91.79 Minimum safe altitudes; general.

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(a) *Anywhere.* An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

(b) *Over congested areas.* Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) *Over other than congested areas.* An altitude of 500 feet above the surface except over open water or sparsely populated areas. In that case, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

(d) *Helicopters.* Helicopters may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with routes or altitudes specifically prescribed for helicopters by the Administrator.

91.81 Altimeter settings.

(a) Each person operating an aircraft shall maintain the cruising altitude or flight level of that aircraft, as the case may be, by reference to an altimeter that is set, when operating—

(1) Below 18,000 feet MSL, to—

(i) The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft;

(ii) If there is no station within the area prescribed in paragraph (a)(1)(i) of this section, the current reported altimeter setting of an appropriate available station; or

(iii) In the case of an aircraft not equipped with a radio, the elevation of the departure airport or an appropriate altimeter setting available before departure; or

(2) At or above 18,000 feet MSL, to 29.92″ Hg.

(b) The lowest usable flight level is determined by the atmospheric pressure in the area of operation, as shown in the following table:

Current altimeter setting	Lowest usable flight level
29.92 or higher	180
29.91 through 29.42	185
29.41 through 28.92	190
28.91 through 28.42	195
28.41 through 27.92	200
27.91 through 27.42	205
27.41 through 26.92	210

(c) To convert minimum altitude prescribed under 91.79 and 91.119 to the minimum flight level, the pilot shall take the flight-level equivalent of the minimum altitude in feet and add the appropriate number of feet specified below, according to the current reported altimeter setting:

Current altimeter setting	Adjustment factor
29.92 or higher	None.
29.91 through 29.42	500 feet.
29.41 through 28.92	1,000 feet.
28.91 through 28.42	1,500 feet.
28.41 through 27.92	2,000 feet.
27.91 through 27.42	2,500 feet.
27.41 through 26.92	3,000 feet.

(Amdt. 91–7, 29 FR 9894, July 23, 1964)

91.83 Flight plan; information required.

(a) Unless otherwise authorized by ATC, each person filing an IFR or VFR flight plan shall include in it the following information:

(1) The aircraft identification number and, if necessary, its radio call sign.

(2) The type of the aircraft or, in the case of a formation flight, the type of each aircraft and the number of aircraft in the formation.

(3) The full name and address of the pilot in command, or, in the case of a formation flight, the formation commander.

(4) The point and proposed time of departure.

(5) The proposed route, cruising altitude (or flight level), and true air speed at that altitude.

(6) The point of first intended landing and the estimated elapsed time until over that point.

(7) The radio frequencies to be used.

(8) The amount of fuel on board (in hours).

(10) The number of persons in the aircraft, except where that information is otherwise readily available to the FAA.

(11) Any other information the pilot in command or ATC believes is necessary for ATC purposes.

(d) *Cancellation.* When a flight plan has been activated, the pilot in command, upon cancelling or completing the flight under the flight plan, shall notify an FAA Flight Service Station or ATC facility.

91.85 Operating on or in the vicinity of an airport; general rules.

(a) Unless otherwise required by Part 93 of this chapter, each person operating an aircraft on or in the vicinity of an airport shall comply with the requirements of this section and of 91.87 and 91.89.

(b) Unless otherwise authorized or required by ATC, no person may operate an aircraft within an airport traffic area except for the purpose of landing at, or taking off from, an airport within that area. ATC authorizations may be given as individual approval of specific operations or may be contained in written agreements between airport users and the tower concerned.

(c) After March 28, 1977, except when necessary for training or certification, the pilot in command of a civil turbojet-powered airplane shall use, as a final landing flap setting, the minimum certificated landing flap setting set forth in the approved performance information in the Airplane Flight Manual for the applicable conditions. However, each pilot in command has the final authority and responsibility for the safe operation of his airplane, and he may use a different flap setting approved for that airplane if he determines that it is necessary in the interest of safety.

91.87 Operation at airports with operating control towers.

(a) *General.* Unless otherwise authorized or required by ATC, each person operating an aircraft to, from, or on an airport with an operating control tower shall comply with the applicable provisions of this section.

(b) *Communications with control towers operated by the United States.* No person may, within an airport traffic area, operate an aircraft to, from, or on an airport having a control tower operated by the United States unless two-way radio communications are maintained between that aircraft and the control tower. However, if the aircraft radio fails in flight, he may operate that aircraft and land if weather conditions are at or above basic VFR weather minimums, he maintains visual contact with the tower, and he receives a clearance to land. If the aircraft radio fails while in flight under IFR, he must comply with 91.127.

(c) *Communications with other control towers.* No person may, within an airport traffic area, operate an aircraft to, from, or on an airport having a control tower that is operated by any person other than the United States unless—

(1) If that aircraft's radio equipment so allows, two-way radio communications are maintained between the aircraft and the tower; or

(2) If that aircraft's radio equipment allows only reception from the tower, the pilot has the tower's frequency monitored.

(d) *Minimum altitudes.* When operating to an airport with an operating control tower, each pilot of—

(1) A turbine-powered airplane or a large airplane shall, unless otherwise required by the applicable distance from cloud criteria, enter the airport traffic area at an altitude of at least 1,500 feet above the surface of the airport and maintain at least 1,500 feet within the airport traffic area, including the traffic pattern, until further descent is required for a safe landing;

(2) A turbine-powered airplane or a large airplane approaching to land on a runway being served by an ILS, shall, if the airplane is ILS equipped, fly that airplane at an altitude at or above the glide slope between the outer marker (or the point of interception with the glide slope, if compliance with the applicable distance from clouds criteria requires interception closer in) and the middle marker; and

(3) An airplane approaching to land on a runway served by a visual approach slope indicator, shall maintain an altitude at or above the glide slope until a lower altitude is necessary for a safe landing.

However, paragraphs (d) (2) and (3) of this section do not prohibit normal bracketing maneuvers above or below the glide slope that are conducted for the purpose of remaining on the glide slope.

(e) *Approaches.* When approaching to land at an airport with an operating control tower, each pilot of—

(1) An airplane, shall circle the airport to the left; and

(2) A helicopter, shall avoid the flow of fixed-wing aircraft.

(f) *Departures.* No person may operate an aircraft taking off from an airport with an operating control tower except in compliance with the following:

(1) Each pilot shall comply with any departure procedures established for that airport by the FAA.

(2) Unless otherwise required by the departure procedure or the applicable distance from clouds criteria, each pilot of a turbine-powered airplane and each pilot of a large airplane shall climb to an altitude of 1,500 feet above the surface as rapidly as practicable.

(g) *Noise abatement runway system.* When landing or taking off from an airport with an operating control tower, and for which a formal runway use program has been established by the FAA, each pilot of a turbine-powered airplane and each pilot of a large airplane assigned a noise abatement runway by ATC, shall use that runway. However, consistent with the final authority of the pilot in command concerning the safe operation of the aircraft as prescribed in 91.3(a), ATC may assign a different runway if requested by the pilot in the interest of safety.

(h) *Clearances required.* No person may, at any airport with an operating control tower, operate an aircraft on a runway or taxiway, or takeoff or land an aircraft, unless an appropriate clearance is received from ATC. A clearance to "taxi to" the takeoff runway assigned to the aircraft is not a clearance to cross that assigned takeoff runway, or to taxi on that runway at any point, but is a clearance to cross other runways that intersect the taxi route to that assigned takeoff runway. A clearance to "taxi to" any point other than an assigned takeoff runway is a clearance to cross all runways that intersect the taxi route to that point.

91.88 Airport radar Service areas.

(a) *General.* For the purpose of this section, the primary airport is the airport designated in *Part71, Subpart L, for which the airport radar service area is designated. A satellite airport is any other airport within the airport radar service area.

(b) *Deviations.* An operator may deviate from any provision of this section under the provisions of an ATC authorization issued by the ATC facility having jurisdiction of the airport radar service area. ATC may authorize a deviation on a continuing basis or for an individual flight, as appropriate.

(c) *Arrivals and overflights.* No person may operate an aircraft in an airport radar service area unless two-way radio communication is established with ATC prior to entering that area and is thereafter maintained with ATC while within that area.

(d) *Departures.* No person may operate an aircraft within an airport radar service area unless two-way radio communication is maintained with ATC while within that area, except that for aircraft departing a satellite airport, two-way radio communication is established as soon as practicable and thereafter maintained with ATC while within that area.

(e) *Traffic patterns.* No person may take off or land an aircraft at a satellite airport within an airport radar service area except in compliance with FAA arrival and departure traffic patterns.

(f) *Equipment requirements.* Unless otherwise authorized by ATC, no person may operate an aircraft within an airport radar service area unless that aircraft is equipped with the applicable equipment specified in 91.24.

91.89 Operations at airports without control towers.

(a) Each person operating an aircraft to or from an airport without an operating control tower shall—

(1) In the case of an airplane approaching to land, make all turns of that airplane to the left unless the airport displays approved light signals or visual markings indicating that turns should be made to the right, in which case the pilot shall make all turns to the right;

(2) In the case of a helicopter approaching to land, avoid the flow of fixed-wing aircraft; and

(3) In the case of an aircraft departing the airport, comply with any FAA traffic pattern for that airport.

(Amdt. 91—17, 30 FR 5507, Apr. 17, 1965)

91.90 Terminal control areas.

NOTE: The provisions of paragraph 91.90 are effective 1 January 1990. The requirement for an operable VOR or TAC4N receiver does not apply to Army AH–1, AH–64, CH–54, and OH–58D helicopters.

(a) *Operating rules.* No person may operate an aircraft within a terminal control area designated in Part 71 of this chapter except in compliance with the following rules:

(1) No person may operate an aircraft within a terminal control area unless that person has received an appropriate authorization from ATC prior to the operation of that aircraft in that area.

(2) Unless otherwise authorized by ATC, each person operating a large turbine engine-powered airplane to or from a primary airport shall operate at or above the designated floors while within the lateral limits of the terminal control area.

(3) Any person conducting pilot training operations at an airport within a terminal control area shall comply with any procedures established by ATC for such operations in the terminal control area.

(b) *Pilot requirements.*

(1) No person may take off or land a civil aircraft at an airport within a terminal control area or operate a civil aircraft within a terminal control area unless:

(i) The pilot-in-command holds at least a private pilot certificate; or

(ii) The aircraft is operated by a student pilot who has met the requirements of 61.95.

(2) Notwithstanding the provisions of (b)(1)(ii) of this section, at the following TCA primary airports, no person may takeoff or land a civil aircraft unless the pilot-in-command holds at least a private pilot certificate.

(i) Atlanta Hartsfield Airport, GA
(ii) Boston Logan Airport, MA
(iii) Chicago O'Hara International Airport, IL
(iv) Dallas/Fort Worth International Airport, TX
(v) Los Angeles International Airport, CA
(vi) Miami International Airport, FL
(vii) Newark International Airport, NJ
(viii) New York Kennedy Airport, NY
(ix) New York La Guardia Airport, NY
(x) San Francisco International Airport, CA
(xi) Washington National Airport, DC
(xii) Andrews Air Force Base, MD

(c) *Communications and navigation equipment requirements.* Unless otherwise authorized by ATC, no person may operate an aircraft within a terminal control area unless that aircraft is equipped with—

(1) An operable VOR or TACAN receiver (except for helicopters operations prior to January 1, 1990); and

(2) An operable two-way radio capable of communicating with ATC on appropriate frequencies for that terminal control area.

(d) *Transponder requirement.* No person may operate an aircraft in a terminal control area unless the aircraft is equipped with the applicable operating transponder and automatic altitude reporting equipment specified in paragraph (a) of 91.24, except as provided for in paragraph (d) of that section.

91.91 Temporary flight restrictions.

(a) The Administrator will issue a Notice to Airmen (NOTAM) designating an area within which temporary flight restrictions apply and specifying the hazard or condition requiring their imposition, whenever he determines it is necessary in order to—

(1) protect persons and property on the surface or in the air from a hazard associated with an incident on the surface;

(2) provide a safe environment for the operation of disaster relief aircraft; or

(3) prevent an unsafe congestion of sightseeing and other aircraft above an incident or event which may generate a high degree of public interest. The Notice to Airmen will specify the hazard of condition that requires the imposition of temporary flight restrictions.

(b) When a NOTAM has been issued under paragraph (a)(1) of this section, no person may operate an aircraft within the designated area unless that aircraft is participating in the hazard relief activities and is being operated under the direction of the official in charge of on scene emergency response activities.

(c) When a NOTAM has been issued under paragraph (a)(2) of this section, no person may operate an aircraft within the designated area unless at least one of the following conditions is met:

(1) The aircraft is participating in hazard relief activities and is being operated under the direction of the official in charge of on scene emergency response activities.

(2) The aircraft is carrying law enforcement officials.

(3) The aircraft is operating under an ATC approved IFR flight plan.

(4) The operation is conducted directly to or from an airport within the area, or is necessitated by the impracticability of VFR flight above or around the area due to weather, or terrain; notification is given to the Flight Service Station (FSS) or ATC facility specified in the NOTAM to receive advisories concerning disaster relief aircraft operations; and the operation does not hamper or endanger relief activities and is not conducted for the purpose of observing the disaster.

(5) The aircraft is carrying properly accredited news representatives, and prior to entering the area, a flight plan is filed with the appropriate FAA or ATC facility specified in the Notice to Airmen and the operation is conducted above the altitude used by the disaster relief aircraft, unless otherwise authorized by the official in charge of on scene emergency response activities.

(d) When a NOTAM has been issued under paragraph (a)(3) of this section, no person may operate an aircraft within the designated area unless at least one of the following conditions is met:

(1) The operation is conducted directly to or from an airport within the area, or is necessitated by the impracticability of VFR flight above or around the area due to weather or terrain, and the operation is not conducted for the purpose of observing the incident or event.

(2) The aircraft is operating under an ATC approved IFR flight plan.

(3) The aircraft is carrying incident or event personnel, or law enforcement officials.

(4) The aircraft is carrying properly accredited news representatives and, prior to entering that area, a flight plan is filed with the appropriate FSS or ATC facility specified in the NOTAM.

(e) Flight plans filed and notifications made with an FSS or ATC facility under this section shall include the following information:

(1) Aircraft identification, type and color.

(2) Radio communications frequencies to be used.

(3) Proposed times of entry of, and exit from, the designated area.

(4) Name of news media or organization and purpose of flight.

(5) Any other information requested by ATC.

91.93 Flight test areas.

No person may flight test an aircraft except over open water, or sparsely populated areas, having light air traffic.

91.95 Restricted and prohibited areas.

(a) No person may operate an aircraft within a restricted area (designated in *Part 73) (New) contrary to the restrictions imposed, or within a prohibited area, unless he has the permission of the using or controlling agency, as appropriate.

(b) Each person conducting, within a restricted area, an aircraft operation (approved by the using agency) that creates the same hazards as the operations for which the restricted area was designated, may deviate from the rules of this subpart that are not compatible with his operation of the aircraft.

91.97 Positive control areas and route segments.

(a) Except as provided in paragraph (b) of this section, no person may operate an aircraft within a positive control area, or positive control route segment designated in Part 71 of this chapter, unless that aircraft is—

(1) Operated under IFR at a specific flight level assigned by ATC;

(2) Equipped with instruments and equipment required for IFR operations;

(3) Flown by a pilot rated for instrument flight; and

(4) Equipped, when in a positive control area, with—

(i) The applicable equipment specified in 91.24; and

(ii) A radio providing direct pilot/controller communication on the frequency specified by ATC for the area concerned.

(b) ATC may authorize deviations from the requirements of paragraph (a) of this section. In the case of an inoperative transponder, ATC may immediately approve an operation within a positive control area allowing flight to continue, if desired, to the airport of ultimate destination, including any intermediate stops, or to proceed to a place where suitable repairs can be made, or both. A request for authorization to deviate from a requirement of paragraph (a) of this section, other than for operation with an inoperative transponder as outlined above, must be submitted at least 4 days before the proposed operation, in writing, to the ATC Center having jurisdiction over the positive control area concerned. ATC may authorize a deviation on a continuing basis or for an individual flight, as appropriate.

(Amdt. No. 91-32, 31 FR 10517, Aug 5, 1966, as amended at 31 FR 11641, Sept. 3, 1966; Amdt. 91-116, 38 FR 14677, June 4, 1973; Amdt. 91-147, 43 FR 7205, Feb. 21, 1978)

91.100 Emergency air traffic rules.

(a) This section prescribes a process for utilizing Notices to Airmen (NOTAM) to advise of the issuance and operations under emergency air traffic rules and regulations and designates the official who is authorized to issue NOTAMs on behalf of the Administrator in certain matters under this section.

(b) Whenever the Administrator determines that an emergency condition exists, or will exist, relating to the FAA's ability to operate the Air Traffic Control System and during which normal flight operations under this chapter cannot be conducted consistent with the required levels of safety and efficiency—

(1) The Administrator issues an immediately effective Air Traffic rule or regulation in response to that emergency condition, and

(2) The Administrator, or the Director, Air Traffic Service, may utilize the Notice to Airmen (NOTAMs) system to provide notification of the issuance of the rule or regulation.

Those NOTAMs communicate information concerning the rules and regulations that govern flight operations, the use of navigation facilities, and designation of that airspace in which the rules and regulations apply.

(c) When a NOTAM has been issued under this section, no person may operate an aircraft, or other device governed by the regulation concerned, within the designated airspace, except in accordance with the authorizations, terms, and conditions prescribed in the regulation covered by the NOTAM.

(Secs. 307, 313(a), 601, 603, 902, 1110, and 1202, Federal Aviation Act of 1958, as amended (49 U.S.C. 1348, 1354(a), 1421, 1442, 1443, 1472, 1510, and 1522); sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

(Amdt. 91-175, 46 FR 16891, Mar. 16, 1981)

91.102 Flight limitations in the proximity of space flight recovery operations

No person may operate any aircraft of U.S. registry or pilot any aircraft under the authority of an airman's certificate issued by the FAA within areas designated in a notice to airmen (NOTAM) for space flight operations except when authorized by ATC or operated under the control of the Dept. of Defense, Manager for Manned Space Flight Support Operations.

(Secs. 307 and 313(a), Federal Aviation Act of 1958, as amended (49 U.S.C. 1348, 1354(a)); 49 U.S.C. 106(g) (Revised, Pub. L. 97-449, January 12, 1983); and 14 CFR 11.45)

(Doc. No. 24258, Amdt. 91-184, 49 FR 38934, Oct. 2, 1984)

(Amdt. 91-15, 30 FR 3638, Mar. 19. 1965)

91.104 Flight restrictions in the proximity of the Presidential and other parties.

No person may operate an aircraft over or in the vicinity of any area to be visited or traveled by the President, the Vice President, or other public figures contrary to the restrictions established by the Administrator and published in a Notice to Airmen (NOTAM).

(Amdt. 91-64, 34 FR 2551, Feb. 25, 1969)

Visual Flight Rules

91.105 Basic VFR weather minimums. [91.155 after 18 Aug 90]

(a) Except as provided in 91.105*b* and 91.107, no person may operate an aircraft under VFR when the flight visibility is less, or at a distance from clouds that is less, than that prescribed for the corresponding altitude in the following table:

Altitude	Flight visibility	Distance from clouds
1,200 feet or less above the surface (regardless of MSL altitude)—		
Within controlled airspace	3 statute miles	500 feet below. 1,000 feet above. 2,000 feet horizontal.
Outside controlled airspace		
Day (except as provided in section 91.105(b))	statute mile	Clear of clouds.

Altitude	Flight visibility	Distance from clouds
Night: (except as provided in section 91.105(b))	3 statute miles	500 feet below. 1,000 feet above. 2,000 feet horizontal.
More than 1,200 feet above the surface but less than 10,000 feet MSL—		
Within controlled airspace	3 statute miles	500 feet below. 1,000 feet above. 2,000 feet horizontal.
Outside controlled airspace		
Day:	1 statute mile	500 feet below. 1,000 feet above. 2,000 feet horizontal.
Night:	3 statute miles	500 feet below. 1,000 feet above. 2,000 feet horizontal.
More than 1,200 feet above the surface and at or above 10,000 feet MSL.	5 statute miles	1,000 feet below. 1,000 feet above. 1 mile horizontal.

(b) *Inapplicability.* Notwithstanding the provisions of paragraph (a) of this section, the following operations may be conducted outside of controlled airspace below 1,200 feet above the surface:

(1) *Helicopter.* When the visibility is less than 1 mile during day hours or less than 3 miles during night hours, a helicopter may be operated clear of clouds if operated at a speed that allows the pilot adequate opportunity to see any air traffic or obstruction in time to avoid a collision.

(2) *Airplane.* When the visibility is less than 3 miles but not less than 1 mile during night hours, an airplane may be operated clear of clouds if operated in an airport traffic pattern within one-half mile of the runway.

(c) Except as provided in 91.107, no person may operate an aircraft, under VFR, within a control zone beneath the ceiling when the ceiling is less than 1,000 feet.

(d) Except as provided in 91.107, no person may take off or land an aircraft, or enter the traffic pattern of an airport, under VFR, within a control zone—

(1) Unless ground visibility at that airport is at least 3 statute miles; or

(2) If ground visibility is not reported at that airport, unless flight visibility during landing or takeoff, or while operating in the traffic pattern, is at least 3 statute miles.

(e) For the purposes of this section, an aircraft operating at the base altitude of a transition area or control area is considered to be within the airspace directly below that area. (Amdt. 91–51, 33 FR 2992, Feb. 15, 1968)

91.107 Special VFR weather minimums. [91.157 after 18 Aug 90]

(a) Except as provided in 93.113 of this chapter, when a person has received an appropriate ATC clearance, the special weather minimums of this section instead of those contained in 91.105 apply to the operation of an aircraft by that person in a control zone under VFR.

(b) No person may operate an aircraft in a control zone under VFR except clear of clouds.

(c) No person may operate an aircraft (other than a helicopter) in a control zone under VFR unless flight visibility is at least one statute mile.

(d) No person may take off or land an aircraft (other than a helicopter) at any airport in a control zone under VFR—

(1) Unless ground visibility at that airport is at least 1 statute mile; or

(2) If ground visibility is not reported at that airport, unless flight visibility during landing or takeoff is at least 1 statute mile.

(e) No person may operate an aircraft (other than a helicopter) in a control zone under the special weather minimums of this section, between sunset and sunrise (or in Alaska, when the sun is more than 6 degrees below the horizon) unless:

(1) That person meets the applicable requirements for instrument flight under Part 61 of this chapter; and

(2) The aircraft is equipped as required in 91.33(d).

(Sec. 604, 72 Stat. 778; 49 U.S.C. 1424)

(Doc No. 1580, Amdt. 1–1, 28 FR 6704, June 29, 1963, as amended by Amdt. 91–37, 32 FR 2940, Feb. 16, 1967; Amdt. 91–52, 33 FR 4096, Mar. 2, 1968; Amdt. 91–99, 37 FR 10435, May 23, 1972)

91.109 VFR cruising altitude or flight level.

Except while holding in a holding pattern of 2 minutes or less, or while turning, each person operating an aircraft under VFR in level cruising flight more than 3,000 feet above the surface shall maintain the appropriate altitude or flight level prescribed below, unless otherwise authorized by ATC:

(a) When operating below 18,000 feet MSL and—

(1) On a magnetic course of zero degrees through 179 degrees, any odd thousand foot MSL altitude plus 500 feet (such as 3,500, 5,500, or 7,500); or

(2) On a magnetic course of 180 degrees through 359 degrees, any even thousand foot MSL altitude plus 500 feet (such as 4,500, 6,500, or 8,500).

(b) When operating above 18,000 feet MSL to flight level 290 (inclusive), and—

(1) On a magnetic course of zero degrees through 179 degrees, any odd flight level plus 500 feet (such as 195, 215, or 235), or

(2) On a magnetic course of 180 degrees through 359 degrees, any even flight level plus 500 feet (such as 185, 205, or 225).

(c) When operating above flight level 290 and —

(1) On a magnetic course of zero degrees through 179 degrees, any flight level, at 4,000 foot intervals, beginning at and including flight level 300 (such as flight level 300, 340, or 380); or

(2) On a magnetic course of 180 degrees through 359 degrees, any flight level, at 4,000 foot intervals, beginning at and including flight level 320 (such as flight level 320, 360, or 400).

(Amdt. 91–7, 29 FR 9894, July 23, 1964, as amended by Amdt. 91–84, 36 FR 43, Jan. 5, 1971; Amdt. 91–149, 43 FR 10904, Mar. 16, 1978)

Instrument Flight Rules

91.115 ATC clearance and flight plan required.

No person may operate an aircraft in controlled airspace under IFR unless—

(a) He has filed an IFR flight plan; and

(b) He has received an appropriate ATC clearance.

91.116 Takeoff and landing under IFR.

(b) *Authorized DH or MDA.* For the purpose of this section, when the approach procedure being used provides for and requires use of a DH or MDA, the authorized decision height or authorized minimum descent altitude is the DH or MDA prescribed by the approach procedure, the DH or MDA prescribed for the pilot in command, or the DH or MDA for which the aircraft is equipped, whichever is higher.

(h) *Comparable values of RVR and ground visibility.*(1) Except for Category II or Category III minimums, if RVR minimums for takeoff or landing are prescribed in an instrument approach procedure, but RVR is not reported for the runway of intended operation, the RVR minimum shall be converted to ground visibility in accordance with the table in paragraph (h)(2) of this section and shall be the visibility minimum for takeoff or landing on that runway.

RVR (feet)	Visibility (statute miles)
1,600	¼
2,400	½
3,200	⅝
4,000	¾
4,500	⅞
5,000	1
6,000	1¼

(i) *Operations on unpublished routes and use of radar in instrument approach procedures.* When radar is approved at certain locations for ATC purposes, it may be used not only for surveillance and precision radar approaches, as applicable, but also may be used in conjunction with instrument approach procedures predicated on other types of radio navigational aids. Radar vectors may be authorized to provide course guidance through the segments of an approach course or fix. When operating on an unpublished route or while being radar vectored, the pilot, when an approach clearance is received, shall, in addition to complying with 91.119, maintain the last altitude assigned to that pilot until the aircraft is established on a segment of a published route or instrument approach procedure unless a different altitude is assigned by ATC. After the aircraft is so established, published altitudes apply to descent within each succeeding route or approach segment unless a different altitude is assigned by ATC. Upon reaching the final approach course or fix, the pilot may either complete the instrument approach in accordance with a procedure approved for the facility or continue a surveillance or precision radar approach to a landing.

(j) *Limitation on procedure turns.* In the case of a radar vector to a final approach course or fix, a timed approach from a holding fix, or an approach for which the procedure specified "No PT," no pilot may make a procedure turn unless cleared to do so by ATC.

(k) *ILS components.* The basic ground components of an ILS are the localizer, glide slope, outer marker, middle marker, and, when installed for use with Category II or Category III instrument approach procedures, an inner marker. A compass locator or precision radar may be substituted for the outer or middle marker. DME, VOR, or nondirectional beacon fixes authorized in the standard instrument approach procedure or surveillance radar may be substituted for the outer marker. Applicability of, and substitution for, the inner marker for Catgory II or III approaches is determined by the appropriate Part 97 approach procedure, letter of authorization, or operations specification pertinent to the operation.

(Amdt. 91–173, 46 FR 2290, Jan. 8, 1981)

91.119 Minimum altitudes for IFR operations.

(a) Except when necessary for takeoff or landing, or unless otherwise authorized by the Administrator, no person may operate an aircraft under IFR below—

(1) The applicable minimum altitudes prescribed in Parts 95 and 97 of this chapter; or

(2) If no applicable minimum altitude is prescribed in those parts—

(i) In the case of operations over an area designated as a mountainous area in Part 95 an altitude of 2,000 feet above the highest obstacle within a horizontal distance of five statute miles from the course to be flown; or

(ii) In any case, an altitude of 1,000 feet above the highest obstacle within a horizontal distance of five statute miles from the course to be flown.

However, if both a MEA and a MOCA are prescribed for a particular route or route segment, a person may operate an aircraft below the MEA down to, but not below, the MOCA, when within 25 statute miles of the VOR concerned (based on the pilot's reasonable estimate of that distance).

(b) *Climb.* Climb to a higher minimum IFR altitude shall begin immediately after passing the point beyond which that minimum altitude applies, except that, when ground obstructions intervene, the point beyond which the higher minimum altitude applies shall be crossed at or above the applicable MCA.

91.121 IFR cruising altitude or flight level.

(a) *In controlled airspace.* Each person operating an aircraft under IFR in level cruising flight in controlled airspace shall maintain the altitude or flight level assigned that aircraft by ATC. However, if the ATC clearance assigns "VFR conditions on-top," he shall maintain an altitude or flight level as prescribed by 91.109.

(b) *In uncontrolled airspace.* Except while holding in a holding pattern of two minutes or less, or while turning, each person operating an aircraft under IFR in level cruising flight, in uncontrolled airspace, shall maintain an appropriate altitude as follows:

(1) When operating below 18,000 feet MSL and—

(i) On a magnetic course of zero degrees through 179 degrees, any odd thousand foot MSL altitude (such as 3,000, 5,000, or 7,000); or

(ii) On a magnetic course of 180 degrees through 359 degrees, any even thousand foot MSL altitude (such as 2,000, or 4,000, or 6,000).

(2) When operating at or above 18,000 feet MSL but below flight level 290, and—

(i) On a magnetic course of zero degrees through 179 degrees, any odd flight level (such as 190, 210, or 230); or

(ii) On a magnetic course of 180 degrees through 359 degrees, any even flight level (such as 180, 200, or 220).

(3) When operating at flight level 290 and above, and—

(i) On a magnetic course of zero degrees through 179 degrees, any flight level, at 4,000 foot intervals, beginning at and including flight level 290 (such as flight level 290, 330, or 370); or

(ii) On a magnetic course of 180 degrees through 359 degrees, any flight level, at 4,000 foot intervals, beginning at and including flight level 310 (such as flight level 310, 350, or 390).

(Amdt. 91–7, 29 FR 9894, July 23, 1964)

91.123 Course to be flown.

Unless otherwise authorized by ATC, no person may operate an aircraft within controlled airspace, under IFR, except as follows:

(a) On a Federal airway, along the centerline of that airway.

(b) On any other route, along the direct course between the navigational aids or fixes defining that route.

However, this section does not prohibit maneuvering the aircraft to pass well clear of other air traffic or the maneuvering of the aircraft, in VFR conditions to clear the intended flight path both before and during climb or descent.

91.125 IFR radio communications.

The pilot in command of each aircraft operated under IFR in controlled airspace shall have a continuous watch maintained on the appropriate frequency and shall report by radio as soon as possible—

(a) The time and altitude of passing each designated reporting point, or the reporting points specified by ATC, except that while the aircraft is under radar control, only the passing of those reporting points specifically requested by ATC need be reported;

(b) Any unforecast weather conditions encountered; and

(c) Any other information relating to the safety of flight.

91.127 IFR operations; two-way radio communications failure.

(a) *General.* Unless otherwise authorized by ATC, each pilot who has two-way radio communications failure when operating under IFR shall comply with the rules of this section.

(b) *VFR conditions.* If the failure occurs in VFR conditions, or if VFR conditions are encountered after the failure, each pilot shall continue the flight under VFR and land as soon as practicable.

(c) *IFR conditions.* If the failure occurs in IFR conditions, or if paragraph (b) of this section cannot be complied with, each pilot shall continue the flight according to the following:

(1) *Route.* (i) By the route assigned in the last ATC clearance received;

(ii) If being radar vectored, by the direct route from the point of radio failure to the fix, route, or airway specified in the vector clearance;

(iii) In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or

(iv) In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance, by the route filed in the flight plan.

(2) *Altitude.* At the highest of the following altitudes or flight levels for the route segment being flown:

(i) The altitude or flight level assigned in the last ATC clearance received;

(ii) The minimum altitude (converted, if appropriate, to minimum flight level as prescribed in 91.81(c)) for IFR operations; or

(iii) The altitude or flight level ATC has advised may be expected in a further clearance.

(3) *Leave clearance limit.*

(i) When the clearance limit is a fix from which an approach begins, a commence descent or descent and approach as close as possible to the expect further clearance time if one has been received, or if one has not been received, as close as possible to the estimated time of arrival as calculated from the filed or amended (with ATC) estimated time en route.

(ii) If the clearance limit is not a fix from which an approach begins, leave the clearance limit at the expect further clearance time if one has been received or if none has been received, upon arrival over the clearance limit, and proceed to a fix from which an approach begins and commence descent or descent and approach as close as possible to the estimated time of arrival as calculated from the filed or amended (with ATC) estimated time enroute.

91.129 Operation under IFR in controlled airspace; malfunction reports.

(a) The pilot in command of each aircraft operated in controlled airspace under IFR, shall report immediately to ATC any of the following malfunctions of equipment occurring in flight:

(1) Loss of VOR, TACAN, ADF, or low frequency navigation receiver capability.

(2) Complete or partial loss of ILS receiver capability.

(3) Impairment of air/ground communications capability.

(b) In each report required by paragraph (a) of this section, the pilot in command shall include the—

(1) Aircraft identification;

(2) Equipment affected;

(3) Degree to which the capability of the pilot to operate under IFR in the ATC system is impaired; and

(4) Nature and extent of assistance he desires from ATC.

FAR Part 105—Parachute Jumping

Subpart A—General

105.1 Applicability.

(a) This Part prescribes rules governing parachute jumps made in the United States except parachute jumps necessary because of an in-flight emergency.

(b) For the purpose of this Part, a "parachute jump" means the descent of a person, to the surface from an aircraft in flight, when he intends to use, or uses, a parachute during all or part of that descent.

Subpart B—Operating Rules

105.11 Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section, this subpart prescribes operating rules governing parachute jumps to which this Part applies.

(b) This subpart does not apply to a parachute jump necessary to meet an emergency on the surface, when it is made at the direction, or with the approval, of an agency of the United States, or of a State, Puerto Rico, the District of Columbia, or a possession of the United States, or of a political subdivision of any of them.

(c) Sections 105.13 through 105.17 and 105.27 through 105.37 of this subpart do not apply to a parachute jump made by a member of an Armed Force—

(1) Over or within a restricted area when that area is under the control of an Armed Force; or

(2) In military operations in uncontrolled airspace.

(d) Section 105.23 does not apply to a parachute jump made by a member of an Armed Force within a restricted area that extends upward from the surface when that area is under the control of an Armed Force.

105.13 General.

No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, if that jump creates a hazard to air traffic or to persons or property on the surface.

105.14 Radio equipment and use requirements.

(a) Except when otherwise authorized by ATC—

(1) No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, in or into controlled airspace unless, during that flight—

(i) The aircraft is equipped with a functioning two-way radio communications system appropriate to the ATC facilities to be used;

(ii) Radio communications have been established between the aircraft and the nearest FAA Air Traffic Control Facility or FAA Flight Service Station at least 5 minutes before the jumping activity is to begin, for the purpose of receiving information in the aircraft about known air traffic in the vicinity of the jumping activity; and

(iii) The information described in subdivision (ii) has been received by the pilot in command and the jumpers in that flight; and

(2) The pilot in command of an aircraft used for any jumping activity in or into controlled airspace shall, during each flight—

Maintain or have maintained a continuous watch on the appropriate frequency of the aircraft's radio communications system from the time radio communications are first established between

the aircraft and ATC, until he advises ATC that the jumping activity is ended from that flight; and

(ii) Advise ATC that the jumping activity is ended for that flight when the last parachute jumper from the aircraft reaches the ground.

(b) If, during any flight, the required radio communications system is or becomes inoperative, any jumping activity from the aircraft in or into controlled airspace shall be abandoned. However, if the communications system becomes inoperative in flight after receipt of a required ATC authorization, the jumping activity from that flight may be continued.

105.15 Jumps over or into congested areas or open air assembly of persons.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, over or into a congested area of a city, town, or settlement, or an open air assembly of persons unless a certificate of authorization for that jump has been issued under this section. However, a parachutist may drift over that congested area or open air assembly with a fully deployed and properly functioning parachute if he is at a sufficient altitude to avoid creating a hazard to persons and property on the ground.

(b) An application for a certificate of authorization issued under this section is made in a form and in a manner prescribed by the Administrator and must be submitted to the FAA Flight Standards District Office having jurisdiction over the area in which the parachute jump is to be made, at least four days before the day of that jump.

(c) Each holder of a certificate of authorization issued under this section shall present that certificate for inspection upon the request of the Administrator, or any Federal, State, or local official.

105.17 Jumps over or onto airports.

Unless prior approval has been given by the airport management, no person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft—

(a) Over an airport that does not have a functioning control tower operated by the United States; or

(b) Onto any airport.

However, a parachutist may drift over that airport with a fully deployed and properly functioning parachute if he is at least 2,000 feet above that airport's traffic pattern, and avoids creating a hazard to air traffic or to persons and property on the ground.

105.19 Jumps in or into control zones with functioning control towers operated by the United States.

(a) No person may make a parachute jump, and no pilot in command may allow a parachute jump to be made from that aircraft, in or into a control zone in which there is a functioning control tower operated by the United States without, or in violation of the terms of, an authorization issued under this section.

(b) Each request for an authorization under this section must be submitted to the control tower having jurisdiction over the control zone concerned and must include the information prescribed in 105.25.

105.20 Jumps in or into airport radar service areas.

(a) No person may make a parachute jump and no pilot in command may allow a parachute jump to be made from that aircraft in or into an airport radar service area without, or in violation of, the terms of an ATC authorization issued under this section.

(b) Each request for an authorization under this section must be submitted to the control tower at the airport for which the airport radar service area is designated.

105.21 Jumps in or into positive control areas.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, in or into a positive control area without, or in violation of, an authorization issued under this section.

(b) Each request for an authorization issued under this section must be submitted to the nearest FAA Air Traffic Control Facility or FAA Flight Service Station and must include the information prescribed by 105.25(a).

105.23 Jumps in or into other airspace.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft, in or into airspace unless the nearest FAA Air Traffic Control Facility or FAA Flight Service Station was notified of that jump at least 1 hour before the jump is to be made, but not more than 24 hours before the jumping is to be completed, and the notice contained the information prescribed in 105.25(a).

(b) Notwithstanding paragraph (a) of this section, ATC may accept from a parachute jumping organization a written notification of a scheduled series of jumps to be made over a stated period of time not longer than 12 calendar months. The notification must contain the information prescribed by 105.25(a), identify the responsible persons associated with that jumping activity, and be submitted at least 15 days, but not more than 30 days, before the jumping is to begin. ATC may revoke the acceptance of the notification for any failure of the jumping organization to comply with its terms.

(c) This section does not apply to parachute jumps in or into any airspace or place described in 105.15, 105.19, or 105.21.

105.25 Information required, and notice of cancellation or postponement of jump.

(a) Each person requesting an authorization under 105.19 or 105.21, and each person submitting a notice under 105.23, must include the following information (on an individual or group basis) in that request or notice:

(1) The date and time jumping will begin.

(2) The size of the jump zone expressed in nautical mile radius around the target.

(3) The location of the center of the jump zone in relation to—

(i) The nearest VOR facility in terms of the VOR radial on which it is located, and its distance in nautical miles from the VOR facility when that facility is 30 nautical miles or less from the drop zone target; or

(ii) The nearest airport, town or city depicted on the appropriate Coast and Geodetic Survey WAC or Sectional Aeronautical Chart, when the nearest VOR facility is more than 30 nautical miles from the drop zone target.

(4) The altitudes above the surface at which jumping will take place.

(5) The duration of the intended jump.

(6) The name, address, and telephone number of the person requesting the authorization or giving notice.

(7) The identification of the aircraft to be used.

(8) The radio frequencies, if any, available in the aircraft.

(b) Each person requesting an authorization under 105.19 or 105.21, and each person submitting a notice under 105.23, must promptly notify the FAA Air Traffic Control Facility or FAA Flight Service Station from which it requested authorization or which it notified, if the proposed or scheduled jumping activity is cancelled or postponed.

105.27 Jumps over or within restricted or prohibited areas.

No person may make a parachute jump, and no pilot in command may allow a parachute jump to be made from that aircraft, over or within a restricted area or prohibited area unless the controlling agency of the area concerned has authorized that jump.

105.29 Flight visibility and clearance from clouds requirements.

No person may make a parachute jump, and no pilot in command of an aircraft may allow a parachute jump to be made from that aircraft—

(a) Into or through a cloud; or

(b) When the flight visibility is less, or at a distance from clouds that is less, than that prescribed in the following table:

Altitude	Flight visibility	Distance from clouds
(1) 1,200 feet or less above the surface regardless of the MSL Altitude	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
(2) More than 1,200 feet above the surface but less than 10,000 feet MSL	3 statute miles	500 feet below 1,000 feet above 2,000 feet horizontal
(3) More than 1,200 feet above the surface and at or above 10,000 feet MSL	5 statute miles	1,000 feet below 1,000 feet above 1 mile horizontal

105.31 (Deleted)

105.33 Parachute jumps between sunset and sunrise.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow any person to make a parachute jump from that aircraft, between sunset and sunrise, unless that person is equipped with a means of producing a light visible for at least three statute miles.

(b) Each person making a parachute jump between sunset and sunrise shall display the light required by paragraph (a) of this section from the time that person exits the aircraft until that person reaches the surface.

105.35 Liquor and drugs.

No person may make a parachute jump while, and no pilot in command of an aircraft may allow a person to make a parachute jump from that aircraft if that person appears to be,—

(a) Under the influence of intoxicating liquor; or

(b) Using any drug that affects his faculties in any way contrary to safety.

105.37 Inspections.

The Administrator may inspect (including inspections at the jump site) any parachute jump operation to which this Part applies, to determine compliance with the regulations of this Part.

Subpart C—Parachute Equipment

105.41 Applicability.

(a) Except as provided in paragraph (b) of this section, this subpart prescribes rules governing parachute equipment used in parachute jumps to which this Part applies.

(b) This subpart does not apply to a parachute jump made by a member of an Armed Force using parachute equipment of an Armed Force.

105.43 Parachute equipment and packing requirements.

(a) No person may make a parachute jump, and no pilot in command of an aircraft may allow any person to make a parachute jump from that aircraft, unless that person is wearing a single harness dual parachute pack, having at least one main parachute and one approved auxiliary parachute that are packed as follows:

(1) The main parachute must have been packed by a certificated parachute rigger, or by the person making the jump, within 120 days before the date of its use.

(2) The auxiliary must have been packed by a certificated and appropriately rated parachute rigger:

(i) Within 120 days before the date of use, if its canopy, shroud, and harness are composed exclusively of nylon, rayon or other similar synthetic fiber or material that is substantially resistant to damage from mold, mildew, or other fungi and other rotting agents propagated in a moist environment; or

(ii) Within 60 days before the date of use, if it is composed in any amount of silk, pongee, or other natural fiber, or material not specified in paragraph (a)(2)(i) of this section.

(b) No person may make a parachute jump using a static line attached to the aircraft and the main parachute unless an assist device, described and attached as follows, is used to aid the pilot chute in performing its function, or, if no pilot chute is used, to aid in the direct deployment of the main parachute canopy.

(1) The assist device must be long enough to allow the container to open before a load is placed on the device.

(2) The assist device must have a static load strength of—

(i) At least 28 pounds but not more than 160 pounds, if it is used to aid the pilot chute in performing its function; or

(ii) At least 56 pounds but not more than 320 pounds, if it is used to aid in the direct deployment of the main parachute canopy.

(3) The assist device must be attached—

(i) At one end, to the static line above the static line pins, or, if static pins are not used, above the static line ties to the parachute cone; and

(ii) At the other end, to the pilot chute apex, bridle cord or bridle loop, or, if no pilot chute is used, to the main parachute canopy.

(c) No person may attach an assist device required by paragraph (b) of this section to any main parachute unless he has a current parachute rigger certificate issued under Part 65 of this chapter or is the person who makes the jump with that parachute.

(d) For the purposes of this section, an "approved" parachute is—

(1) A parachute manufactured under a type certificate or a technical standard order (C–23 series); or

(2) A personnel-carrying military parachute (other than a high altitude, high speed, or ejection kind) identified by an NAF, AAF, or AN drawing number, an AAF order number, or any other military designation or specification number.

Glossary

Section I
Abbreviations

A
acceptance test flight

AA
air to air

AAF
Army Air Factory

ADF
automatic direction finder

AEFA
Aviation Engineering Flight Activity

AGL
above ground level

AH
attack helicopter

ALSE
aviation life support equipment

AMOC
Aviation Maintenance Officers Course

AN
Army/Navy

AO
aerial observer

APART
Annual Proficiency and Readiness Test

APU
Auxiliary Power Unit

ARCOM
Army Reserve Command

ARNG
Army National Guard

ARRS
Aerospace Rescue and Recovery Service

ASD(MRA&L)
Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics)

ASI
additional skill identifier

ATC
air traffic control

ATM
Aircrew Training Manual

ATP
Aircrew Training Program

C
combat mission

CE
crew chief

CH
transport helicopter

CNGB
Chief, National Guard Bureau

CONUS
continental United States

CP
copilot

D
day (for flight condition)

D
imminent danger (for mission)

DA
Department of the Army

DAC
Department of the Army Civilian

DARR
Department of the Army Regional Representative

DATT
Defense Attaches

DCSOPS
Deputy Chief of Staff for Operations and Plans

DES
Directorate of Evaluation and Standardization

DH
decision height

DME
distance measuring equipment

DOD
Department of Defense

DG
day vision goggles

DS
day vision system

EML
environment and moral leave

ETA
estimated time of arrival

F
maintenance test flight

FAA
Federal Aviation Administration

FAAO
Field Artillery Aerial Observer

FAR
Federal Aviation Regulation

FDR
flight data records

FLIP
Flight Information Publication

FSS
Flight Service Station

FW
fixed wing

H
hood

HQDA
Headquarters, Department of the Army

ICAO
International Civil Aviation Organization

IE
instrument flight examiner

IFR
instrument flight rules

ILS
Instrument landing system

IMC
instrument meteorological conditions

IP
instructor pilot

MACOM
major Army command

MDA
minimum descent altitude

ME
maintenance test flight evaluation

MEA
minimum en route altitude

MM/MTPC
Maintenance Manager/Maintenance Test Pilot Course

MO
flight surgeon or ther medical personnel

MOC
maintenance operation check

MOCA
minimum obstruction celarance altitude

MP
maintenance test pilot

MSL
mean sea level

MTF
maintenance test flight

N
night

NA
not applicable

NAF
Naval Air Factory

NAS
National Airspace System

NOE
nap-of-the-earth

NOS
national ocean survey

NOTAM
notices to airmen

NS
night systems

NVD
night vision devices

NVG
night vision goggles

PI
pilot

PC
pilot in command

POI
program of instruction

RC
Reserve Component

RL
readiness level

RVR
runway visual range

RW
rotary wing

S
service missions

SFTS
synthetic flight training systems

SP
standardization instructor pilot

T
training

TACAN
tactical air navigation

TCA
terminal control area

TDA
table of distribution

TOE
table of organization and equipment

TR
terrain

USAALS
U.S. Army Aviation Logistics School

USAASD
U.S. Army Aeronautical Services Detachment

USAASO
U.S. Army Aeronautical Services Office

USAAVNC
U.S. Army Aviation Center

UT
unit trainer

VFR
visual flight rules

VMC
visual meterological condition

VOR
visual omni range

VSSE
velocity of safe single engine

W
weather

WAC
world aeronautical chart

X
experimental test flight

XP
experimental test pilot

Section II
Terms

Acceptance flight
A flight made to accept a contractor-produced aircraft, or one on which a contractor or Army depot has performed maintenance or contract modification before return to the operational inventory. It can also be a flight made by the receiving unit upon transfer of aircraft between components and/or units.

Aerobatic flight
Intentional maneuvers involving an abrupt change in an aircraft's attitude, and abnormal altitude, or abnormal acceleration not needed for normal flight. This does not include a maneuver that conforms to the aircraft flight manual such as a "break" or a tactical or training maneuver when part of an approved training exercise.

Aircrew training manual
A publication that contains Army training requirements for Army flight crewmembers and programs for qualification, refresher, mission, and continuation training in support of the aircrew training program.

Aircrew training program
Army aviation aircrew standardized training and evaluation program.

Airplane
An engine-driven fixed-wing aircraft heavier than air that is supported in flight by the dynamic reaction of the air against its wings.

Approval authority
An individual authorized to approve and sign a flight plan.

Armed Forces
The Army, Navy, Air Force, Marine Corps, and Coast Guard, including their regular and Reserve Components and members serving without component status.

Army Air Factory
An identification used for a personnel-carrying military parachute.

Army aviation disaster, search, and rescue unit
A temporarily organized unit employed during an emergency. The unit equips, supplies, safeguards, maintains, and operates Army aircraft during a disaster, an air search, or rescue.

Army aviation standardization
The use of uniform tested procedures and techniques to attain a high level of readiness and professionalism in the operation and employment of Army aircraft. This is achieved through standardized publications and training literature, a disciplined instructor pilot force, tests, flight checks, and command supervision. Standardization includes aviator cockpit performance, aircrew teamwork, tactics, maintenance, and safety.

Army aviator
An aeronautical designation awarded to members of the U.S. Army by the Secretary of the Army or designated officers.

Army/Navy
An identification used for a personnel-carrying military parachute.

Area standardization committee
A committee established within a nondefined geographical area composed of units too small to effectively set up their own standardization committee. The committee may be formed from various commands with aviation assets.

Aviation officer
An Army aviator who commands an aviation unit or is a member of a commander's staff and advises or supervises Army aviation functions.

Category (of aircraft)
Aircraft designated as either airplane or helicopter synonymous with type.

Category II operations
With respect to the operation of aircraft, means a straight-in ILS approach to the runway of an airport under a Category II ILS instrument approach procedure issued by the administrator or other appropriate authority.

Civil aircraft
Aircraft other than public aircraft.

Command/staff aviation officer
A special staff aviator designated by the commander to provide advice or manage aviation assets, aviation standardization, and aviation safety.

Cross-country flight
A flight extending beyond the local flying area or within the local flying area which is planned to terminate at a place other than the place of origin.

DA civilian pilot (aviator)
A civil service employee who holds appropriate qualifications and who must comply with this regulation and other DA aviation-related regulations.

Flight crew station
A station in aircraft at which flight controls may be used to control aircraft in flight; for example, pilot or copilot stations specified in operator's manuals.

Flight surgeon
Medical officer who has graduated from an approved military course in aviation medicine. References to flight surgeons include aeromedical physician's assistant.

Helicopter
A rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.

Installation
For Army Aviation Standardization Program purposes, the term includes continental United States (CONUS) Active Component posts, camps, or stations; Army National Guard (ARNG) States; Army Reserve Commands (ARCOMs); oversea corps, divisions, independent regiments, groups, and brigades. For other than standardization purposes, includes Reserve Component facilities.

Instructor Pilot
An aviator who conducts training and evaluation of pilots and unit trainers in designated aircraft and promotes safety among aviators. Training and evaluation include aircraft operation, qualification, unit employment, visual and instrument flight, and crew performance.

Instrument flight examiner
An aviator qualified to give instrument flight examinations and conduct instrument flight training.

Large aircraft
Aircraft of more than 12,500 pounds, maximum certificated takeoff weight.

Maintenance operational check
Systems check made on the ground through engine runup and taxiing. Checks made using auxiliary power or testing equipment to simulate, insofar as possible, actual conditions under which the system is to operate. These checks are made to ensure that aircraft systems or components disturbed during an inspection or maintenance have been repaired or adjusted satisfactorily.

Naval Air Factory
An identification used for a personnel-carrying military parachute.

Nonstandard aircraft
Army aircraft no longer classified Standard A or B or aircraft obtained from other DOD activities or commercial sources.

Operational flying
Flying performed by rated personnel primarily for mission support or training, while serving in assignments in which basic flying skills normally are kept current while performing assigned duties. All flying by rated members of the RC not on extended active duty is operational flying.

Parachute
A device used or intended to be used to retard the fall of a body or object through the air.

Person
An individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.

Public aircraft
Aircraft used only in the service of a government or a political subdivision. It does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes.

Qualified for aviation service
A volunteer aviation status requisite to entitlement for incentive pay.

Standardization instructor pilot
A qualified instructor pilot designated by the commander, in writing, to perform standardization duties.

Synthetic Flight Training Systems
A group of high-fidelity instrument and visual flight simulators capable of providing basic, advanced, and tactical training in either manual or automated modes.

Tactical environment
a. Actual—an active theater or area of combat operations.
b. Simulated—an operational area established for training and in which combat operations are simulated.

Training mission
Missions flown for flight qualification or refresher training. ATP requirements, and authorized training exercises.

Unit Trainer
An aviator designated to instruct in areas of special training to assist in unit training programs and achieve established training goals.

Weather forecaster
Any person approved by the USAF or Navy Air Weather Services or by the National Weather Service to forecast aviation weather for flight planning.

Weather observer
Any person approved by USAF or Navy or by the national weather service to make weather observations.

Index

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RESERVED

AIRCREW MISSION BRIEFING

For use of this form, see AR 95-1; the proponent agency is DCSOPS.

UNIT _____

DATE _____

MSN NO. _____

BRIEFING

1. SITUATION.

a. Threat: _____

b. Friendly Units: _____

c. Attachments/Detachments: _____

*2. MISSION. _____

3. EXECUTION.

*a. Mission Type: ☐ TAC ☐ TNG ☐ ADMIN ☐ MAINT ☐ MED ☐ Other _____

*b. Authorized Conditions: ☐ DAY ☐ N ☐ VMC ☐ IMC ☐ DG ☐ NG ☐ HOOD ☐ Other _____

*c. Authorized Flight Modes: ☐ Formation ☐ Low-Level ☐ Contour ☐ NOE

d. Movement Techniques: _____

*e. Aircraft/Crews:

	TYPE/TAIL #	PC/SEAT	CP	CE	
(1)					
(2)					
(3)					
(4)					

(Attach additional sheets as required.)

*f. Special Mission Equipment: _____

g. Authorized Loads: Passengers_____ Cargo_____ Ammunition _____

h. Flight Route: _____

i. Mission Restrictions: _____

*j. Safety Considerations: _____

4. SERVICE SUPPORT.

a. Refuel/Rearm Location: _____

b. Ration Support: _____

c. Assembly Area/Bivouac/Remain overnight locations: _____

d. Maintenance Support: _____

5. COMMAND AND SIGNAL.

*a. Command: (1) Air Mission Commander _____

(2) Command or support relationships to supported unit:

☐ Attached ☐ OPCON ☐ DS ☐ GS TO: _____

b. Signal (except published frequencies): _____

6. ADDITIONAL REMARKS. _____

_____

(BRIEFER'S SIGNATURE)

*Mandatory for all flights.

MISSION BRIEF-BACK

***1. MISSION.**

a. ☐ Mission can be accomplished as briefed.
b. Identify required deviations from mission: _____

2. PREMISSION PLANNING.

*a. WEATHER. ☐
*b. PERFORMANCE PLANNING. ☐
*c. NOTAMS. ☐
*d. CREW STATUS.
(1) Crew endurance. ☐
(2) Qualified and current. ☐

3. PASSENGERS/CARGO/AMMUNITION.

a. Loads planned per briefing. ☐
b. Passenger manifest on file. ☐

***4. FLIGHT ROUTES.** _____

5. REFUELING ARRANGEMENTS. _____

6. REMARKS. _____

_____
(PIC/AIR MISSION COMMANDER'S SIGNATURE)

POST-MISSION DEBRIEF

1. *MISSION STATUS. ☐ Completed as briefed ☐ Not completed (See remarks) ☐ Cancelled (See remarks) ☐ Changed (See remarks)

2. PIREPS. _____

3. *CREW ENDURANCE STATUS. _____

4. AIRCRAFT STATUS.

*a. Maintenance _____
*b. Fuel _____
c. Ammunition _____
*d. Avionics _____

5. REMARKS: _____

_____
(PIC/AIR MISSION COMMANDER'S SIGNATURE)

*Mandatory for all flights.

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