Aircraft Systems

Chapter 2

Questions

1. When can you log flight time as Pilot in Command (PIC)?
2. I once flew my personal Cessna 150 to a meeting in Palo Alto, CA for a work meeting (unrelated to flying). As a private pilot, can my work compensate me for the flight?
3. Do you have to tell your passengers how to use the safety belts?
4. Is ADS-B Out required when flying under NAS Whidbey's Class-C airspace? This is more than 30-nm way from SEATAC.
5. Would the National Transportation Safety Board (NTSB) need to be notified if your passenger lit a cigarette?
6. NASA through the Aviation Safety Reporting System (ASRS) publishes CALLBACK, which describes how pilots have violated FAA regulations. How do they get this information?
7. When can you, as the PIC, deviate from any of the regulations and to what extent?

Regulations

- 14 CFR (formally FAR)
  - Parts 1, 21, 39, 43, 61, 68, 71, 91
- 49 CFR (NTSB)
  - Part 830
- Aeronautical Information Manual (AIM)
  - Chapters 1–8, Appendix 4.

14 CFR

- Part 1: Definitions
- Part 21: Aircraft Certification
- Part 39: Airworthiness Directives
- Part 43: Maintenance
- Part 61: Pilot Certification
- Part 68: Basic Med
- Part 71: Airspace
- Part 91: Flight Operations

14 CFR 1

Pages and pages of definitions. For example:

Flight Visibility means the average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

`https://www.ecfr.gov/current/title-14/chapter-I/subchapter-A/part-1`

Category and Class

Categroy (1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a broad classification of aircraft. Examples include: airplane; rotorcraft; glider; and lighter-than-air...

Class (1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a classification of aircraft within a category having similar operating characteristics. Examples include: single engine; multiengine; land; water; gyroplane; helicopter; airship; and free balloon

14 CFR 21

21.181: Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the FAA, airworthiness certificates are effective as follows:

(1) Standard airworthiness certificates, special airworthiness certificates—primary category, and airworthiness certificates issued for restricted or limited category aircraft are effective as long as the maintenance, preventive maintenance, and alterations are performed in accordance with Parts 43 and 91 of this chapter and the aircraft are registered in the United States.

`https://www.ecfr.gov/current/title-14/section-21.181`

14 CFR 39

39.3: FAA's airworthiness directives are legally enforceable rules that apply to the following products: aircraft, aircraft engines, propellers, and appliances.

`https://www.ecfr.gov/current/title-14/section-39.3`

14 CFR 61

61.3: No person may serve as a required pilot flight crewmember of a civil aircraft of the United States, unless that person has in their physical possession or readily accessible in the aircraft when exercising the privileges of that pilot certificate or authorization:

- A pilot certificate issued under this part and in accordance with 61.19
- Driver's license issued by a State, the District of Columbia, or territory or possession of the United States
- Appropriate medical certificate issued under part 67 of this chapter, or other documentation acceptable to the FAA,

`https://www.ecfr.gov/current/title-14/section-61.3`

14 CFR 61

61.15: Your certificate may be suspended, revoked, and future applications for certificates be denied for:

- Any violation of Federal or State laws involving alcohol or drugs
- Conviction, cancellation, or denial of driving privileges for operating a moving vehicles while intoxicated

You are required to notify the FAA of motor vehicles actions within 60 days.

`https://www.ecfr.gov/current/title-14/section-61.15`

14 CFR 61

61.39: Prerequisites for *Practical* test.

- Successful knowledge test within 24 months
- Present the report of successful knowledge test
- Accomplish required training
- Hold a 3rd class medical
- Logged training within the previous 2 months
- Have a completed and signed application

`https://www.ecfr.gov/current/title-14/section-61.39`
`https://www.ecfr.gov/current/title-14/section-61.43`
`https://www.ecfr.gov/current/title-14/section-61.45`

14 CFR 61

61.51 (e) (4): A student pilot may log pilot-in-command time only when the student pilot:

- Is the sole occupant of the aircraft,
- Has a solo flight endorsement, **and**
- Is undergoing training for a pilot certificate or rating.

`https://www.ecfr.gov/current/title-14/section-61.51`

14 CFR 61

61.56 (c): Except as provided in paragraphs (d), (e), and (g) of this section, no person may act as pilot in command of an aircraft unless, since the beginning of the 24th calendar month before the month in which that pilot acts as pilot in command, that person has

- Accomplished a flight review given in an aircraft for which that pilot is rated by an authorized instructor, and
- A logbook endorsed from an authorized instructor who gave the review certifying that the person has satisfactorily completed the review.

Paragraph (e) states that passing any phase of the FAA-Wings program meets this requirement.

`https://www.ecfr.gov/current/title-14/section-61.56`

14 CFR 61

61.57: To carry passengers during the day, the PIC must have logged 3 takeoffs and landings in the previous 90 days.

To carry passengers at night, the PIC must have logged 3 takeoffs and landings to a full stop in the previous 90 days.

Night is defined here as 1 hour after sunset to 1 hour before sunrise.

`https://www.ecfr.gov/current/title-14/section-61.57`

14 CFR 61

61.60: You have 30 days to notify the FAA of a change of address.

`https://www.ecfr.gov/current/title-14/section-61.60`

14 CFR 61

61.87: A student pilot may not operate an aircraft in solo flight unless that student has met the requirements of this section.

- The PPL Knowledge test
- Pre-solo training and logbook endorsement
- Training in required maneuvers...

`https://www.ecfr.gov/current/title-14/section-61.87`

14 CFR 61

61.89: A student pilot may not act as pilot in command of an aircraft:

- That is carrying a passenger;
- That is carrying property for compensation or hire;
- For compensation or hire;
- In furtherance of a business;
- Internationally*;
- With a flight or surface visibility of less than 3 statute miles during daylight hours or 5 statute miles at night;
- When the flight cannot be made with visual reference to the surface; or
- In a manner contrary to any limitations placed in the pilot's logbook by an authorized instructor.

`https://www.ecfr.gov/current/title-14/section-61.89`

14 CFR 61

61.95: A student pilot may not operate an aircraft on a solo flight in Class B airspace unless:

- The student has received ground and flight training in that specific Class B airspace;
- The student has a logbook endorsement from a CF-I within the past 90-days; and
- The endorsement states that the student has received ground and flight training for that specific Class B airspace.

`https://www.ecfr.gov/current/title-14/section-61.95`

14 CFR 68

Basic Med

This is an alternative to maintaining a 3rd class medical. There are limitations on what and where you can fly with basic med. For example, no international flights and fewer than eight seats.

`https://www.ecfr.gov/current/title-14/part-68`

14 CFR 71

Airspace:

- Class A: From 18,000 feet to 60,000 feet.
- Class B: Around busy airports like Seatac.
- Class C: Congested airports with radar service like NAS Whidbey.
- Class D: Towered airports like Bellingham.
- Class E: Controlled airspace with IFR traffic
- Class G: Uncontrolled airspace (shouldn't have IFR traffic).

`https://www.ecfr.gov/current/title-14/part-71`

14 CFR 91

Okay, here are the flight rules

14 CFR 91

91.3:

(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 in-flight emergency requiring immediate action, the pilot in command may deviate from any rule of this part 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 the request of the Administrator, send a written report of that deviation to the Administrator.

https://www.ecfr.gov/current/title-14/section-91.3
https://www.ecfr.gov/current/title-14/section-91.7
https://www.ecfr.gov/current/title-14/section-91.9

14 CFR 91

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

https://www.ecfr.gov/current/title-14/section-91.13

14 CFR 91

91.15: No pilot in command of a civil aircraft may allow any object to be dropped from that aircraft in flight that creates a hazard to persons or property. However, this section does not prohibit the dropping of any object if reasonable precautions are taken to avoid injury or damage to persons or property.

`https://www.ecfr.gov/current/title-14/section-91.15`

14 CFR 91

91.17: No person may act or attempt to act as a crewmember of a civil aircraft

(a) Within 8 hours after the consumption of any alcoholic beverage;

(b) While under the influence of alcohol;

(c) While using any drug that affects the person's faculties in any way contrary to safety; or

(d) While having an alcohol concentration of 0.04 or greater in a blood or breath specimen.

https://www.ecfr.gov/current/title-14/section-91.17
https://www.ecfr.gov/current/title-14/section-91.19

14 CFR 91

91.103: Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include:

- Runway lengths at airports of intended use; and
- Required takeoff and landing distances as published in an approved flight manual.

https://www.ecfr.gov/current/title-14/section-91.103
https://www.ecfr.gov/current/title-14/section-91.105

14 CFR 91

91.107

- No pilot may take off a U.S.-registered civil aircraft unless the pilot in command of that aircraft ensures that each person on board is briefed on how to fasten and unfasten that person's safety belt and, if installed, shoulder harness.
- No pilot may cause to be moved on the surface, take off, or land a U.S.-registered civil aircraft unless the pilot in command of that aircraft ensures that each person on board has been notified to fasten his or her safety belt and, if installed, his or her shoulder harness.

`https://www.ecfr.gov/current/title-14/section-91.107`

14 CFR 91

91.111:

(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.

(c) No person may operate an aircraft, carrying passengers for hire, in formation flight.

`https://www.ecfr.gov/current/title-14/section-91.111`

14 CFR 91

91.113: Right of way
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.

An aircraft in distress has the right-of-way over all other air traffic.

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

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.

`https://www.ecfr.gov/current/title-14/section-91.113`

14 CFR 91

91.113: 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, powered parachute, weight-shift-control aircraft, airplane, powered-lift, or rotorcraft.

(3) An airship has the right-of-way over a powered parachute, weight-shift-control aircraft, airplane, powered-lift, or rotorcraft.

(4) An aircraft towing or refueling other aircraft has the right-of-way over all other engine-driven aircraft.

`https://www.ecfr.gov/current/title-14/section-91.113`

14 CFR 91

91.113: Right of way
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.

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, except that they shall not take advantage of this rule to force an aircraft off the runway surface which has already landed and is attempting to make way for an aircraft on final approach.

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.

`https://www.ecfr.gov/current/title-14/section-91.113`

14 CFR 91

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

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

(b) 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 those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

`https://www.ecfr.gov/current/title-14/section-91.119`

14 CFR 91

91.121: 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:

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

  (ii) If there is no station within the area prescribed area, he 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.

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

`https://www.ecfr.gov/current/title-14/section-91.121`

14 CFR 91

91.123:
You must follow ATC clearances unless amended or responding to an emergency.

If you do deviate from a clearance due to an emergency, you must notify ATC.

If requested, you must file a report of the emergency and deviate with 48 hours.

`https://www.ecfr.gov/current/title-14/section-91.123`

14 CFR 91

91.125:

Signal	Ground	Air
Steady Green	Take off	Land
Flashing Greed	Taxi	Approach
Steady Red	Stop	Give way and circle
Flashing Red	Clear Runway	Unsafe, Do Not Land
Steady White	Return to Ramp	N/A
Red and Green	Use Extreme Caution	

`https://www.ecfr.gov/current/title-14/section-91.125`

14 CFR 91

91.126: Class G Airports

- Left traffic, unless otherwise posted.
- Two-way radio communication if towered.

`https://www.ecfr.gov/current/title-14/section-91.126`

14 CFR 91

91.127: Class E Airports

- Follow established traffic pattern.
- Two-way radio communication if towered.

`https://www.ecfr.gov/current/title-14/section-91.127`

14 CFR 91

91.129: Class D Airspace

- Maintain two-way radio communication.
  - If radio failure, maintain VFR, visual sight of the tower, and land when cleared.
- Follow clearances for takeoff and landing.

`https://www.ecfr.gov/current/title-14/section-91.129`

14 CFR 91

91.130: Class C Airspace

- Two-way radio communication.
  - If radio failure, maintain VFR, visual sight of the tower, and land when cleared.
- Follow clearances for takeoff, landing, and taxi.

`https://www.ecfr.gov/current/title-14/section-91.130`

14 CFR 91

91.131: Class B Airspace

- Follow all clearances (e.g., need a clearance to enter)
- Have a PPL or Student Certificate and logbook endorsement.
- Two-way radio, transponder, Mode-C, and ADS-B out.

`https://www.ecfr.gov/current/title-14/section-91.131`

14 CFR 91

91.135: Class A Airspace

- IFR Flight plan and clearance
- Two-radio, transponder, and navigation equipment

`https://www.ecfr.gov/current/title-14/section-91.135`

14 CFR 91

91.151: Fuel Requirements
No person may begin a flight in an airplane under VFR conditions 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

- VFR Day: there after for 30 minuets.
- VFR Night: there after for 45 minuets.

`https://www.ecfr.gov/current/title-14/section-91.151`

14 CFR 91

91.155: Basic VFR Weather Minimums

Airspace, Altitude, and Time	Vis.	Clouds
Class A	None	None
Class B	3 sm	Clear of Clouds
Class C	3 sm	1-5-2
Class D	3 sm	1-5-2
Class E, below 10,000 MSL	3 sm	1-5-2
above 10,000 MSL	5 sm	1-1-1
Class G,below 1,200 AGL, Day	1sm	Clear of Clouds
below 1,200 AGL, Night	1 sm	Clear of Clouds
below 10,000 MSL, Day	1 sm	1-5-2
below 10,000 MSL, Night	3 sm	1-5-2
above 10,000 MSL	5	1-1-1

`https://www.ecfr.gov/current/title-14/section-91.155`

14 CFR 91

Now for the really scary part...

In class G
91.155(b)(2): If the visibility is less than 3 statute miles but not less than 1 statute mile during night hours and you are operating in an airport traffic pattern within 1/2 mile of the runway, you may operate an airplane clear of clouds

`https://www.ecfr.gov/current/title-14/section-91.155`

14 CFR 91

91.157: Special VFR

- ATC Clearance;
- Clear of Clouds;
- Flight visibility of 1 sm; and
- Between sunrise and sunset*;

`https://www.ecfr.gov/current/title-14/section-91.157`

14 CFR 91

91.159: At cruse above 3,000 AGL and below 18,000 MSL, VFR operations shall be at

- odd thousands plus 500' on magnetic courses from 0° through 179°; and
- even thousands plus 500' on magnetic courses from 180° through 359°.

`https://www.ecfr.gov/current/title-14/section-91.159`

14 CFR 91

91.203: Aircraft Certification

The airworthiness certificate must be in the aircraft.

The registration must be in the aircraft.

`https://www.ecfr.gov/current/title-14/section-91.203`

14 CFR 91

91.205: Required Instruments

- Airspeed, Altimeter, Magnetic Compass,
- Fuel guages, Tachometer (RMP), Oil pressure, Oil temp, Engine temp (if liquid cooled), Manifold pressure (if constant speed),
- Landing gear position lights,
- Anti-collision light (beacon),
- Seat belts with shoulder harnesses.
- Emergency Location Transmitter (not with 25nm of airport)*.

`https://www.ecfr.gov/current/title-14/section-91.205`

14 CFR 91

91.205: Required Instruments **At Night**

- Position Lights
- Adequate charging system
- Replacement fuses (three of each amperage or full set).

`https://www.ecfr.gov/current/title-14/section-91.205`
`https://www.ecfr.gov/current/title-14/section-91.209`

14 CFR 91

91.207: ELT

- Tested every 12 months
- Batteries replaced at 50% of useful life or 1 hour of continuous use.

`https://www.ecfr.gov/current/title-14/section-91.207`

14 CFR 91

91.209: Oxygen

- 12,500' to 14,000': entire flight crew must use oxygen after 30 minutes.
- 14,000' to 15,000': entire flight crew must use oxygen.
- Above 15,000': passengers must be *provided* oxygen.

`https://www.ecfr.gov/current/title-14/section-91.209`

14 CFR 91

91.215: Transponder

- Class A, B, and C airspace
- Above Class B and C airspace
- Within 30nm of Class B airport
- Above 10,000'MSL and 1,200'AGL

ADS-B out is required wherever a transponder is required.

Transponders must be tested every 24 months.

`https://www.ecfr.gov/current/title-14/section-91.215`
`https://www.ecfr.gov/current/title-14/section-91.225`
`https://www.ecfr.gov/current/title-14/section-91.227`
`https://www.ecfr.gov/current/title-14/section-91.413`

14 CFR 91

91.303: Aerobatics
91.307: Parachute operations
91.309: Towing
91.313: Restricted Category
91.319: Provisional Certification

https://www.ecfr.gov/current/title-14/section-91.303
https://www.ecfr.gov/current/title-14/section-91.307
https://www.ecfr.gov/current/title-14/section-91.309
https://www.ecfr.gov/current/title-14/section-91.313
https://www.ecfr.gov/current/title-14/section-91.319

14 CFR 91

91.403: The owner operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition, including compliance with part 39 of this chapter.

91.405: Each owner or operator of an aircraft shall ensure that maintenance personnel make appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service.

91.409: Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had an annual inspection in accordance with part 43 of this chapter and has been approved for return to service by a person authorized by 43.7 of this chapter.

`https://www.ecfr.gov/current/title-14/section-91.403`
`https://www.ecfr.gov/current/title-14/section-91.405`
`https://www.ecfr.gov/current/title-14/section-91.409`
`https://www.ecfr.gov/current/title-14/section-91.417`

49 CFR 803

803.5: Immediate notification to NTSB:

- Flight control malfunction,
- Inability of required crew to perform functions,
- Unconstrained failure of turbine engine,
- In-flight fire,
- Mid-air collision,
- More than $25,000 damage to property other then aircraft,
- Release of any portion of a propeller,
- Loss of more than 50% of electronic displays,

`https://www.ecfr.gov/current/title-49/part-803`

49 CFR 803

803.10: Preserve the wreckage, cargo, and records of accident aircraft.

803.15: Report within 10 days of accident or within 7 days of unloaded overdue aircraft.

`https://www.ecfr.gov/current/title-14/part-803`

Advisory Circulars

https://www.faa.gov/regulations_policies/advisory_circulars/

AIM

https://www.faa.gov/air_traffic/publications/atpubs/aim_html/

AIM

1-1-4	3-1-4	4-1-8	4-3-14	7-1-4
1-1-16	3-1-5	4-1-9	4-3-18	7-1-7
1-1-17	3-2-1	4-1-11	4-3-20	7-4-2
2-1-2	3-2-3	4-1-13	4-3-24	7-4-3
2-1-7	3-2-4	4-1-15	4-4-6	7-4-4
2-1-8	3-2-5	4-1-18	4-4-15	7-4-5
2-1-9	3-2-6	4-1-20	5-1-5	7-4-6
2-3-3	3-4-3	4-2-3	5-1-9	7-5-6
2-3-4	3-4-4	4-2-9	5-1-13	8-1-2
2-3-5	3-4-5	4-2-13	5-1-14	8-1-3
2-3-8	3-4-6	4-3-3	5-2-4	8-1-4
2-3-9	3-5-1	4-3-4	6-2-4	8-1-5
2-3-10	3-5-2	4-3-10	6-3-1	8-1-6
2-3-11	3-5-4	4-3-11	7-1-3	8-1-8

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NEW SMYRNA BREACH MUNI ARPT: Rwy 15/33 Rwy lgts oper
dusk-down.  Ryw 11/29 Rwy lgts oper dusk-2400.  For VASI
and Reu 11/29 Rey lgts after 2400 key 122.9 3 times for
low, 4 times for med, and 7 times for high.
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1) What is the status of the runway lights for a landing at New Smyrna Beach Muni on Rwy 15 after 2400?

A For runway lights, key the transmitter the proper number of times on 122.8 MHz.

B The lights on this runway are not operated at night.

C The runway lights operate from dusk to dawn.

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 FT LAUDERDALE-HOLLYWOOD INTL ARPT: TPA 1000 ft.  Thr Rwy
27L dsplcd 401 ft.  Thr Rwy 09L dsplcd 609 ft.  Thr Rwy
27R dsplcd 599 ft.
```

2) The traffic pattern for light airplanes and gyroplanes at Ft. Lauderdale-Hollywood International Airport is changed to

A 800 feet.

B 1,000 feet.

C 1,300 feet.

3) FAA Advisory Circulars are availableto all pilots and are obtained by

A distribution from the nearest FAA district office.

B ordering those desired.

C subscribing to the Federal Register.

4) Information concerning parachute jumping sites may be found in the

A Graphic Notices and Supplemental Data.

B Chart Supplement.

C NOTAMs.

5) Between publication dates for sectional charts, information as to changes can be found in

A Chart Supplement.

B NOTAM(D)s.

C Aeronautical Information Manual.

6) What is the general direction of movement of other aircraft during a night flight if you observe a steady red light and a flashing red light ahead and at the same altitude?

A The other aircraft is crossing to the left.

B The other aircraft is crossing to the right.

C The other aircraft is approaching head-on.

7) If an aircraft is involved in an accident which results in substantial damage to the aircraft, the neatest NTSB field office should be notified

A immediately.

B within 7 days.

C within 10 days.

8) Of the following incidents, which would require an immediate notification to the nearest NTSB field office?)

A An in-flight generator or alternator failure.

B An in-flight fire.

C Ground damage to the propeller blades.

9) A private pilot acting as pilot-in-command, or in any other capacity as a required pilot flight crewmember, must have in their personal possession while aboard the aircraft.

A a current logbook endorsement to show that a flight review has been satisfactorily accomplished.

B the current and appropriate pilot and medical certificates.

C the pilot logbook to show recent experience requirements to serve as pilot-in-command have been met.

10) What is the duration, if any, of a private pilot certificate?

A It expires 24 months after issuance.

B As long as the flight review and the medical certificate are current.

C Indefinite.

11) A third-class medical certificate was issued on May 3, this year, to a pilot less than 40 years of age. To exercise the privileges of a private pilot certificate, the medical certificate will be valid through

A May 31, 1 year later.

B May 31, 5 years later.

C May 3, 2 years later.

12) To act as pilot-in-command of an airplane that has more than 200hp, a person is required to do which of the following?

A Make three solo takeoffs and landings in such an airplane.

B Receive flight instituting and an endorsement in an airplane that has more than 200 hp.

C Hold a 200 hp class rating.

13) To act as pilot-in-command of an airplane with passengers aboard, the pilot must have made at least three takeoffs and langings in an aircraft in the same category and class within the preceding

A 120 days.

B 90 days.

C 12 months.

14) If recency of experience requirements for night flight have not been met and official sunset is 1830, the latest time passengers may be carried is

A 1829

B 1859

C 1929

15) To meet the recent flight experience requirements for acting as pilot-in-command carrying passengers at night, a pilot must have made, within the preceding 90 days and at night, at least

A three takeoffs and landings to a full stop in the same category and class of aircraft to be used.

B three takeoffs and landings in the same category and class of aircraft to be used.

C three takeoffs and landings to a full stop in the same category but not necessarily in the same class of aircraft to be used.

16) In regard to priviledges and limitations, a private pilot may

A not pay less than the pro rata share of the operating expenses of a flight with passengers provided the expenses involve only fuel, oil, airport expenditures, or rental fees.

B act as pilot-in-command of an aircraft carrying a passenger for compensation if the flight is in connection with a business or employment.

C not be paid in any manner for the operating expenses of a flight.

17) What preflight action is required for every flight

A Check weather reports and forecasts.

B Determine runway length at airports of intended use

C Determine alternatives if the flight cannot be completed.

18) In addition to other preflight actions for a VFR flight away from the vicinity of the departure airport, regulations require the pilot-in-command to

A flight a flight plan.

B check each fuel tank visually to ensure that it is full.

C determine runway lengths at airports of intended use and the airplane's takeoff and landing distance data.

19) Under what condition may a person act as pilot-in-command of an aircraft after consuming alcohol which may affect that person's faculties?

A Passengers may not be carried.

B A waiver must be obtained

C Only after the expiration of 8 hours.

20) What is the fuel requirement for flight under VFR at night?

A Enough to complete the flight at normal cruising flight with adverse wind conditions.

B Enough to fly to the first point of intended landing and to fly after that for 30 minutes at normal cruising speed.

C Enough to fly to the first point of intended landing and to fly after that for 45 minutes at normal cruising speed.

21) Where, in the 49 contiguous United States and District of Columbia, is a radar beacon transponder equipped with a Mode C required?

A In Class D airspace.

B In Class B airspace and in controlled airspace above 10,000 feed MSL.

C In Class B airspace.

22) An aircraft has a 100-hour inspection when the tachometer read 1259.6. When is the next 100-hour inspection due?

A 1269.6

B 1309.6

C 1359.6

23) A 100-hour inspection was due at 3302.5 hours on the tachometer but was actually done at 3309.5 hours. When is the next 100-hour inspection due?

A 3409.5

B 3402.5

C 3909.5

24) Which operations would be described as preventive maintenance?

A Removing and installing glider wings.

B Repair of landing gear brace struts.

C Refinishing decorative coating of fuselage.

25) Preventive maintenance has been performened on an aircraft. What paperwork is required?

A A full, detailed description of the wok done must be entered in the airframe logbook.

B The date the work was completed and the name of the person who did the work must be entered in the pilot's logbook.

C The signature, certificate number, and kind of certificate held by the person approving the work and a description of the work must be entered in the aircraft maintenance records.

26) You plan a night flight in uncontrolled airspace, intending to stay about 1,000 feet above the terrain. What cloud clearance and visibility restrictions must you observe? You do not have an instrument rating.

A One mile visibility and clear of clouds.

B Three miles visibility, 500 feed below, 1,000 feed above, and 2,000 feet horizontally from all clouds.

C One mile visibility, 500 feed below, 1,000 feed above, and 2,000 feet horizontally from all clouds.

27) Would the answer to the previous question be different if you planned to fly more than 1,200 feed above the ground in Class G (uncontrolled) airspace?

A Yes

B No