

HOW TO FLY a PIPER CUB

Foreword

This booklet is presented with the hope that it will help you understand the basic flight principles and appreciate the many benefits of flying. A series of charts acquaints you with the construction of the Piper Cub Special. Simple descriptions and photographs take you, step-by-step, through a typical flight lesson. If you study the charts, descriptions and photographs carefully, it will be a great help when you take actual flying lessons in a Piper Cub. You'll be a big jump ahead of those who do not understand the fundamentals covered in this booklet.

"How to Fly a Piper Cub" will

PRICES EFFECTIVE JULY 1, 1946
F. A. F. LOCK HAVEN, PENNA.

Piper Cub Special

\$2,195.00

Piper Cub Super Cruiser

\$3,295.00

Standard Equipment on Piper Super Cruiser includes all
Features listed herein Plus—

TWO WAY, TWO BAND RADIO

and

STEERABLE FULL SWIVEL TAILWHEEL

PIPER AIRCRAFT CORPORATION

Lock Haven, Pa.

Learn to Fly . . . It's Easy, Practical, Pleasant, Economical!

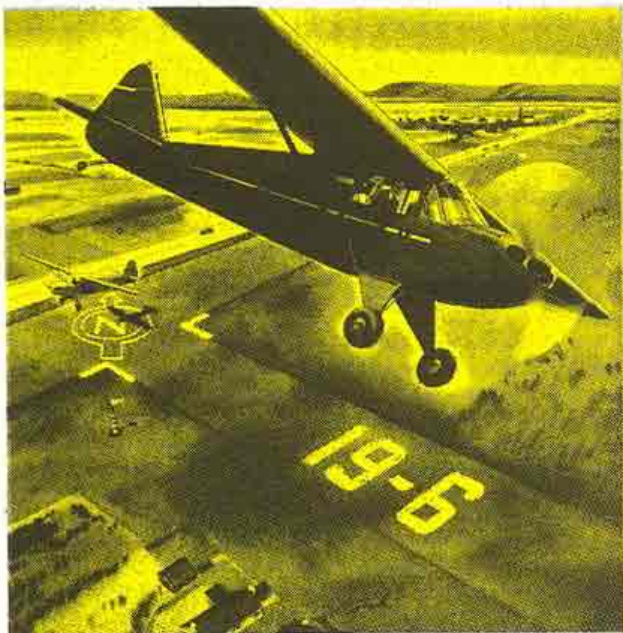


Not so many years ago flying was considered a “daredevil” sport. Pilots were looked upon with awe, planes were expensive and tricky, the cost of learning to fly was way above what the common man could afford. Then the sight of an airplane flying over your home town would cause more excitement than a good-sized fire.

The advent of the dependable, easy-to-fly light airplane has changed all this. The famous Piper Cub has brought the fun of flying within the reach of all of us. Piloting a plane is no longer an awe-inspiring art, reserved for a small group of supermen. It's easy to fly! In fact, whether you are sixteen or sixty, if you are in average good health and are capable of exercising normal judgment, you can solo a Piper Cub with only a few hours of dual instruction!

And, today light planes are not expensive. You don't have to be wealthy to own one, for the light plane is low in price and uses less gasoline and oil than a medium-priced car. With a modest down payment you can pay for your Piper Cub airplane in convenient monthly installments.

Yes, today it's easy to fly . . . and economical too!



Further on in this booklet you will find a series of photographs and descriptions that show you, step-by-step, just how easy it is. The descriptions were written and the photographs supervised by a certified flight instructor. They clearly

show you how to fly such planes as the familiar Piper Cub planes shown in this booklet. If you thoroughly understand the flight principles described and illustrated, it will be a great help to you when you take your actual flight instruction. In addition, it will be to your advantage to study aeronautics at home or in school and read good aviation magazines and books. Then see your Piper dealer and learn to fly.

Learning to fly will open bright new horizons to you! You will enjoy the finest, most economical transportation of all time. In the coming air age, landing strips, small airports and seaplane bases will dot the country. Then you will be able to fly with speed and ease to the many out-of-the-way towns that are most difficult to reach by other means of transportation.

Your life will be fuller, happier and more healthful in the coming air age. For instance, you will fly to your favorite vacation spot or to an entirely new one much more quickly and more often. You'll have more time at your favorite rendezvous . . . more time to fish, hunt,

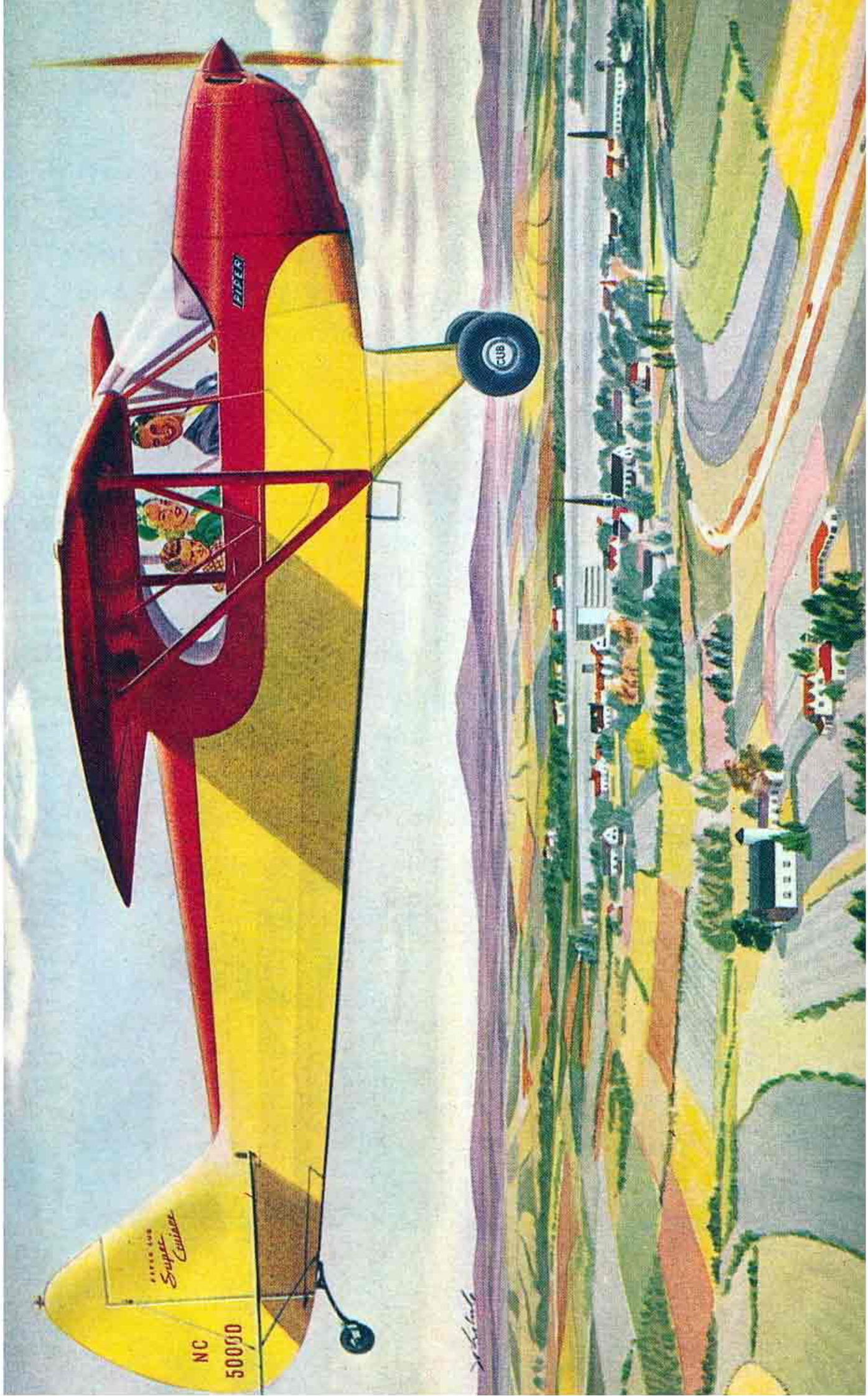
swim or just loaf and relax.

And, flying won't be limited to pleasure trips. Your business life, too, will be materially affected by the coming air age. For then, in your own or a company-owned light plane, you will meet appointments, make business or sales calls, or visit your men in the field, with a minimum loss of time from your office or plant. You not only will cover your present territory more quickly, but will be able to make new, more distant calls and expand your territory considerably. You will save valuable time . . . and money too.

If your occupation is farming, you can look forward to the coming air age with just as much anticipation as your city cousins. A field can be easily made into a landing area and a barn or shed converted into a hangar for your plane. You will fly quickly to market for repair parts for your farm equipment. You will dust your crops in minutes, where it now takes many hours. When snowed under or bogged-down by mud, you will be able to reach town for supplies and fly the children to school in your plane.

Yes, flying is indeed easy, practical, pleasant and economical. Plan to learn to fly soon in a Piper Cub. On the following pages you will find three popular Piper Cub models pictured and described.





Piper Cub

Super Cruiser

A three-passenger airplane equipped with an electric starter and muffler, the Super Cruiser is the ideal ship for the family that wants to go places quickly, safely and economically. It is flown from the front, where the pilot has excellent visibility, and seats two more in the wide rear seat. A powerful direct-drive 100-horsepower engine takes the Super Cruiser off in a short run, gives it a cruising speed of 105 miles per hour. With a non-stop cruising range of 600 miles the Super Cruiser offers utility not found in any other plane in its price class!

The interior of this roomy plane is attractively upholstered and has a new indirectly lighted instrument panel for quick, easy reading. The handsome exterior, with its two-tone red and cream finish, will make you proud to own the Super Cruiser. In addition to the above features, standard equipment includes dual controls, dual ignition, dual hydraulic brakes, parking brake, one-piece Plexiglas windshield, cabin heater, carburetor heater, carburetor air filter, mixture control, full-swivel tail wheel, 12-volt battery, navigation lights, motor-driven generator, and provisions for blind flying instruments and radio. Its price (subject to change without notice) is \$2905, F.A.F. Lock Haven, Penna.





Piper Cub

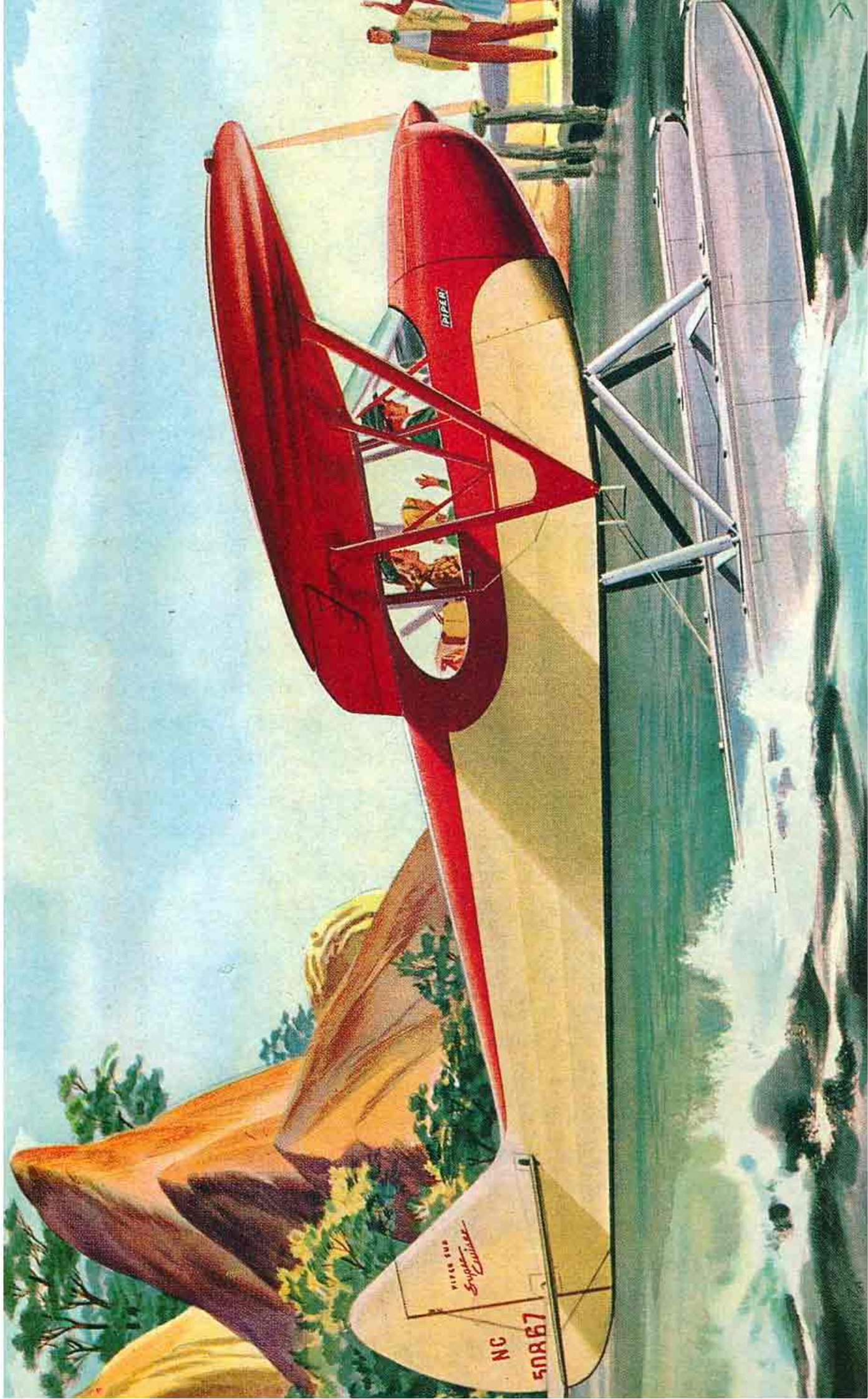
Special

Here is the Piper Cub that brings plane ownership within reach of the average income. The Piper Cub Special—today's greatest airplane value—is a personalized version of the Cubs in which the great majority of military and private pilots earned their wings. It incorporates those features of safety and maneuverability which made the Cub the outstanding observation, liaison and ambulance ships in combat during World War II.

The two-passenger Piper Cub Special is low in cost and its thrifty 65-horsepower engine offers you real economy of operation. A muffler quiets the engine to a husky purr. The Special is equipped with a one-piece Plexiglas windshield for increased visibility. A cabin heater keeps you comfortable during cold weather flying. The famous tandem seating arrangement, with dual controls, makes for ease of flying right from the start.

The Special is attractively finished in the Piper Cub yellow with black trim. Standard equipment includes, also, hydraulic brakes with controls for both passengers, compass, carburetor heater, carburetor air filter, steerable tail wheel, entrance step, four-ply tires and wires and brackets for navigation lights . . . Its price (subject to change without notice) is \$2010, F.A.F. Lock Haven, Penna.





Piper Cub

Sea Scouts

Haven't you often wished you could travel to your favorite hunting or fishing spot more often and spend more time there? That's just what you can do in one of the two new Piper Cub Sea Scout models! The thousands of water playgrounds in the country that used to be days of traveling away can be reached in a fraction of that time when you own a Sea Scout. Summers spent at the lake or on the ocean become greater sport than you ever dreamed.

The Piper Cub Super Sea Scout has basically the same standard equipment and specifications as the Piper Cub Super Cruiser. It is equipped with floats and regular wheel landing gear as well. Each type of landing gear is interchangeable with the other, giving you the advantages of both seaplane and landplane.

Another model, the Piper Cub Sea Scout, brings you the same basic equipment and specifications as the Piper Cub Special. It, too, offers floats and wheel landing gear, each interchangeable with the other.

Either model will add hours of time and fun to every one of your vacation trips. Both of these planes are easy to fly, economical to operate . . . good, safe planes you can afford to buy and fly!



SPECIFICATIONS

GENERAL SPECIFICATIONS	SPECIAL	SUPER CRUISER
Length Overall	22' 4 1/2"	22' 10"
Height Overall	6' 8"	6' 10"
Wing Span	35' 2 1/2"	35' 5 1/2"
Chord	63"	63"
Total Wing Area (sq. ft.)	178.5	179.3
Weight Empty (lbs.)	680	950
Useful Load (lbs.)	540	800
Gross Weight (lbs.)	1220	1750
Baggage Compartment	10" x 11" x 24"	13" x 12" x 30"
Baggage Capacity (lbs.)	20	41
Rate of Climb (full load) (fpm)	450	750*
Top Speed (mph)	83	115
Cruising Speed (mph)	73	105
Landing Speed (mph)	39	49
Take-off Run (full load) (ft.)	370	480
Landing Run (ft.)	290	360
Cruising Range (miles)	206	600
Absolute Ceiling (ft.)	14,000	18,000**
Gas Consumption at Cruising (gal. per hr.)	4.4	6.5
Gas Tank Capacity (gal.)	12	38

*1500 lbs. gross, 750 fpm; 1750 lbs. gross, 600 fpm.

**1500 lbs. gross, 18,000 ft.; 1750 lbs. gross, 15,500 ft.

*Specifications
Subject to Change*

**YOU CAN BUY
ANY PIPER CUB
MODEL FOR**

1/3 DOWN

**AND CONVENIENT
PAYMENTS BY
THE MONTH**

Learning about the Piper Cub Special

BEFORE anyone can learn to fly satisfactorily, it is desirable to know something of the construction of the plane which will be used in flight training.

As we are discussing the Piper Cub Special, the charts on the following pages give you the necessary information concerning this plane.

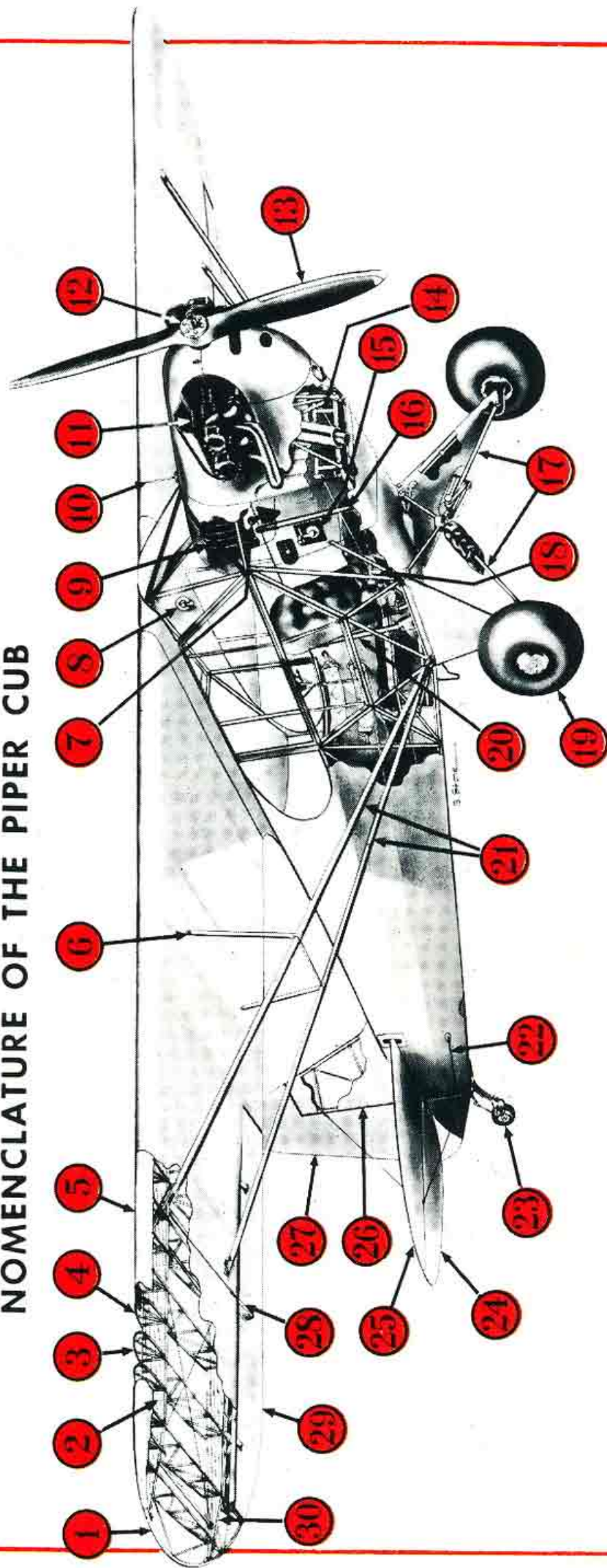
On page 14 you will find a chart showing the “Nomenclature of the Piper Cub.” This cutaway view clearly indicates the various parts of the plane and gives you the correct name for each part. When you know and understand these parts, you will be able to talk “pilot’s language” about any light airplane.

The instruments of the Piper Cub are illustrated and their functions described on page 15. You can readily see how important it is to be able to read and use these instruments properly.

Page 16 covers the control system of the Piper Cub. After you have acquainted yourself with its nomenclature, refer to this chart while studying the chart on page 17, “Movement of Controls and their effect upon attitude of the Piper Cub.” A working knowledge of how various movements of the stick and rudder pedals affect the flight attitude of the plane is most important. The movements shown in this chart are basic. Proper combinations of them will enable a pilot to make the plane do anything he desires—even the most complicated maneuvers.

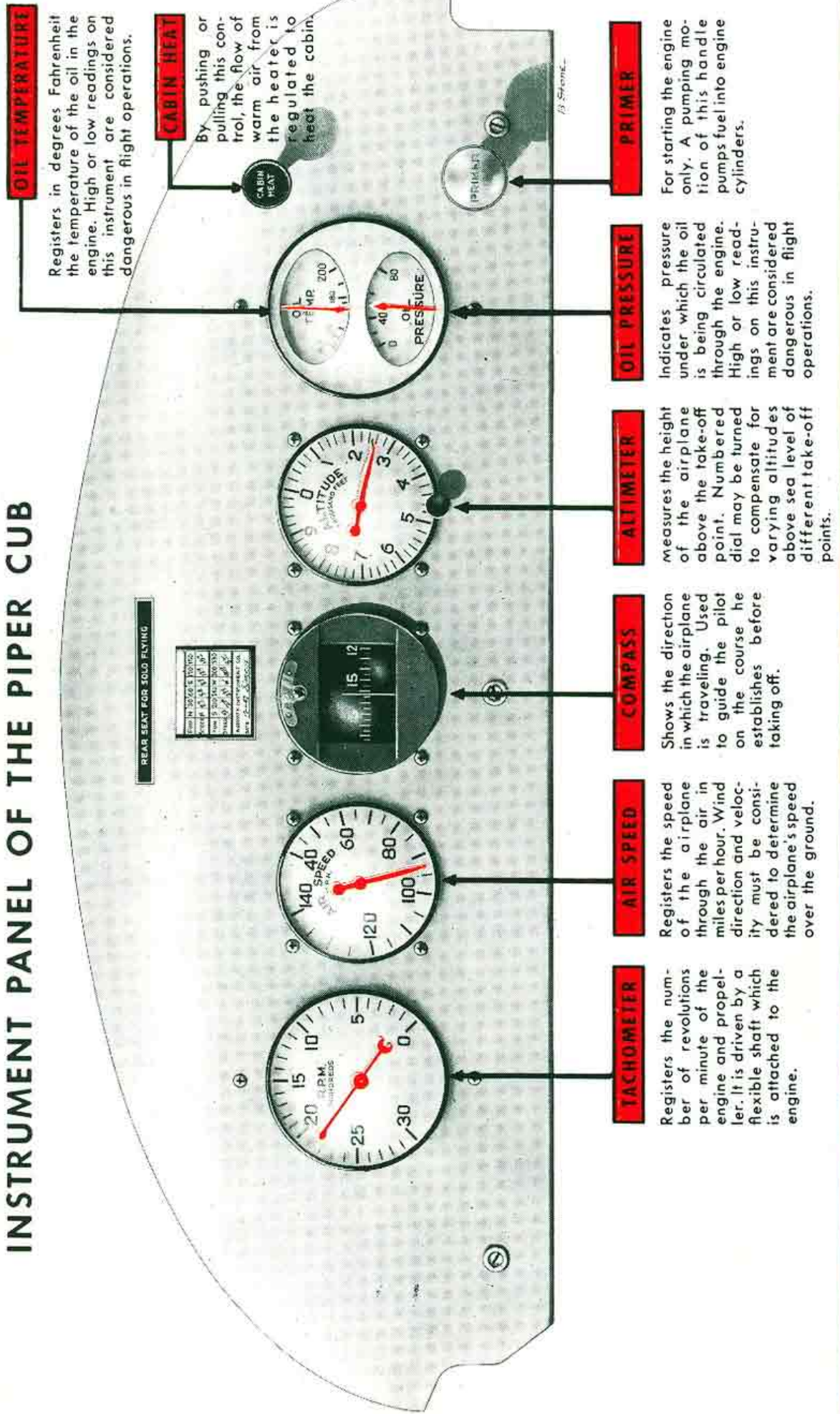
An understanding of these charts and those on page 18 will prove most helpful in studying the illustrated flight steps on page 20 and pages that follow, as well as in your actual flight instruction in a Piper Cub. Study them carefully!

NOMENCLATURE OF THE PIPER CUB



- | | | | |
|-----------------------|--------------------|---------------------------------|---------------------------|
| 1. Wing Tip Bow | 6. Jury Struts | 12. Propeller Hub | 26. Fin |
| 2. Front Wing Spar | 7. Throttle | 13. Propeller | 27. Rudder |
| 3. Wing Rib | 8. Ignition Switch | 14. Front Rudder Pedal | 28. Aileron Control Cable |
| 4. Wing Nose Rib | 9. Fuel Tank | 15. Stabilizer Adjustment Crank | 29. Aileron |
| 5. Leading Edge Cover | 10. Fuel Gauge | | 30. Rear Wing Spar |
| | 11. Engine | | |
| | | 16. Front Control Stick | |
| | | 17. Landing Gear Shock Struts | |
| | | 18. Rear Rudder Pedal | |
| | | 19. Wheel and Tire | |
| | | 20. Rear Control Stick | |
| | | 21. Wing Lift Struts | |
| | | 22. Rudder Control Cable | |
| | | 23. Tail Wheel | |
| | | 24. Elevator | |
| | | 25. Stabilizer | |

INSTRUMENT PANEL OF THE PIPER CUB



OIL TEMPERATURE
Registers in degrees Fahrenheit the temperature of the oil in the engine. High or low readings on this instrument are considered dangerous in flight operations.

CABIN HEAT
By pushing or pulling this control, the flow of warm air from the heater is regulated to heat the cabin.

PRIMER
For starting the engine only. A pumping motion of this handle pumps fuel into engine cylinders.

OIL PRESSURE
Indicates pressure under which the oil is being circulated through the engine. High or low readings on this instrument are considered dangerous in flight operations.

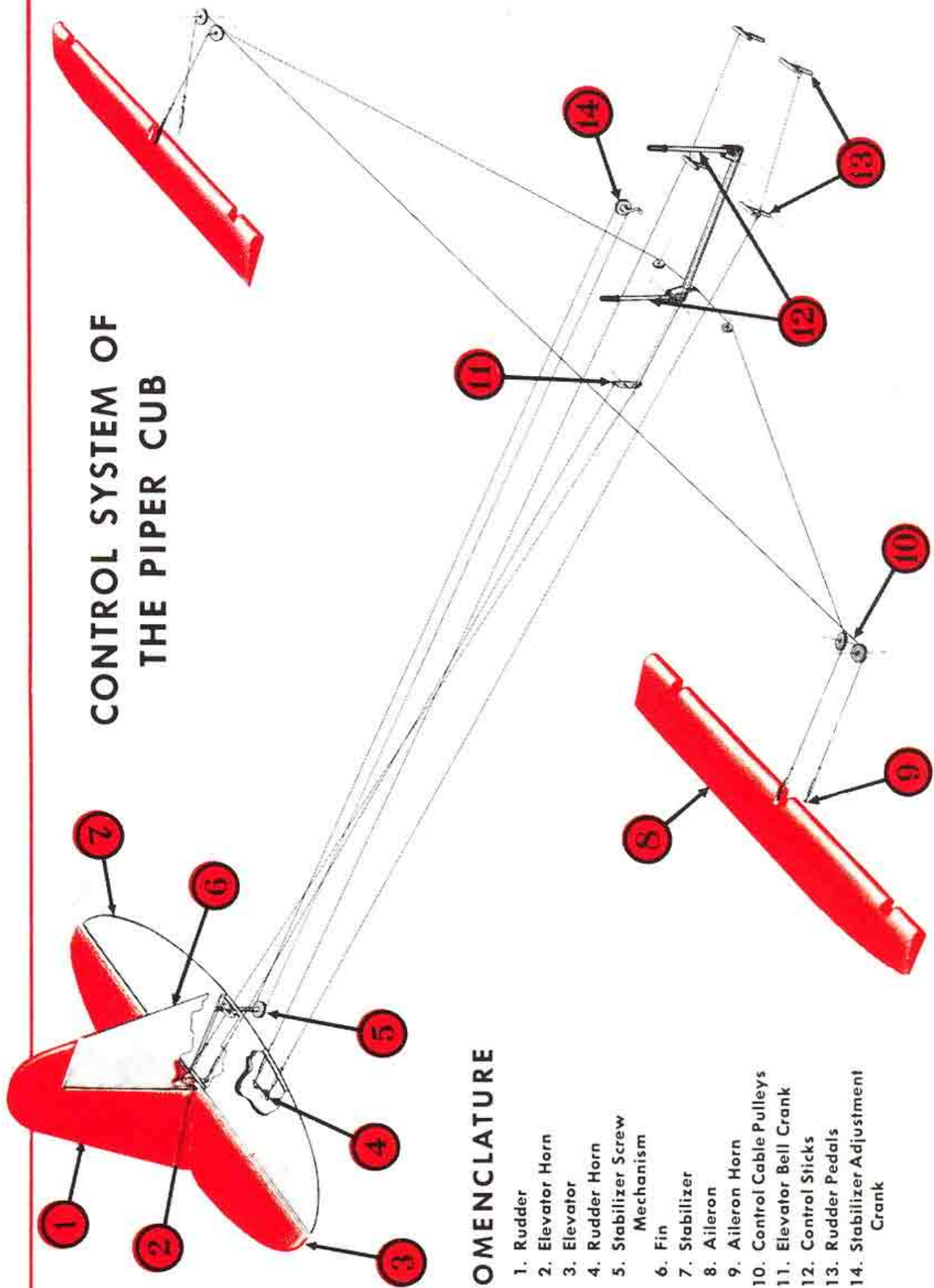
ALTIMETER
Measures the height of the airplane above the take-off point. Numbered dial may be turned to compensate for varying altitudes above sea level of different take-off points.

COMPASS
Shows the direction in which the airplane is traveling. Used to guide the pilot on the course he establishes before taking off.

AIR SPEED
Registers the speed of the airplane through the air in miles per hour. Wind direction and velocity must be considered to determine the airplane's speed over the ground.

TACHOMETER
Registers the number of revolutions per minute of the engine and propeller. It is driven by a flexible shaft which is attached to the engine.

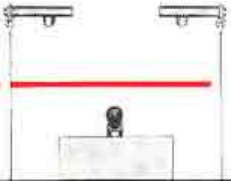


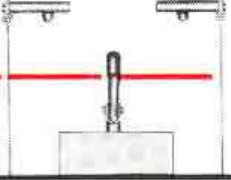
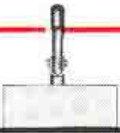
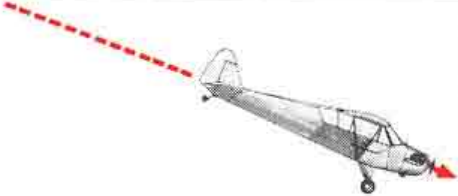



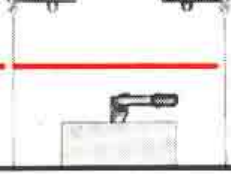
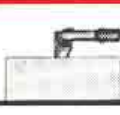
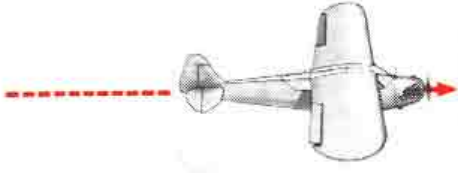
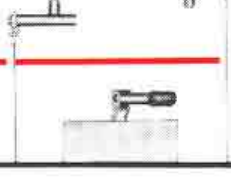

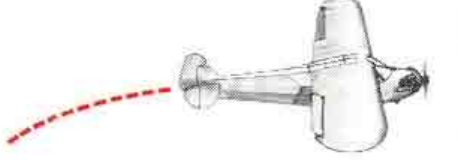
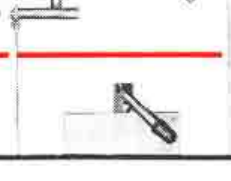
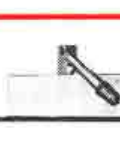
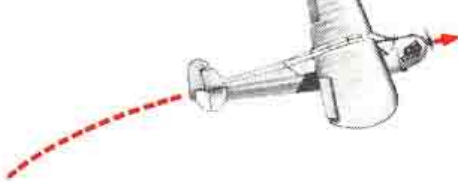
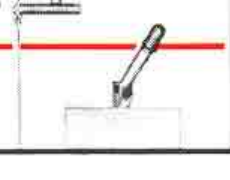


CONTROL SYSTEM OF THE PIPER CUB



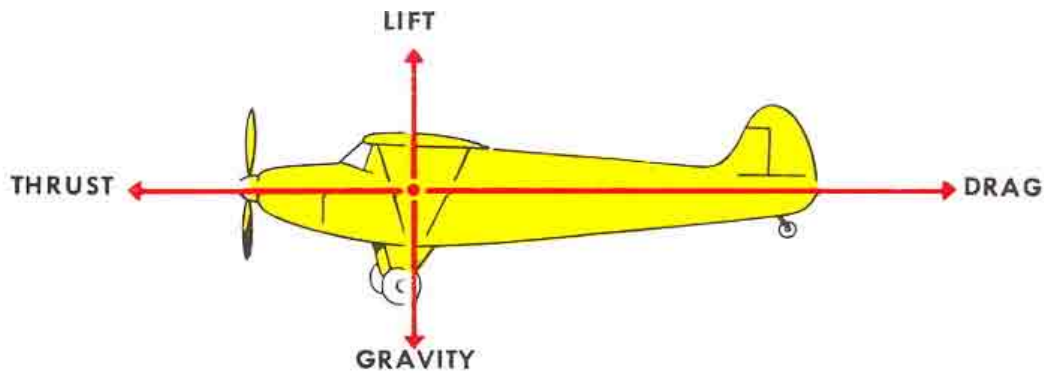
NOMENCLATURE

1. Rudder
2. Elevator Horn
3. Elevator
4. Rudder Horn
5. Stabilizer Screw Mechanism
6. Fin
7. Stabilizer
8. Aileron
9. Aileron Horn
10. Control Cable Pulleys
11. Elevator Bell Crank
12. Control Sticks
13. Rudder Pedals
14. Stabilizer Adjustment Crank

MOVEMENT OF CONTROLS AND THEIR EFFECT UPON ATTITUDE OF THE PIPER CUB

<p>RUDDER PEDALS NEUTRAL</p>  <p>STICK NEUTRAL</p> 	<p>Result STRAIGHT AND LEVEL FLIGHT</p> 
<p>RUDDER PEDALS NEUTRAL</p>  <p>STICK FORWARD</p> 	<p>Result A GLIDE OR DIVE</p> 
<p>RUDDER PEDALS NEUTRAL</p>  <p>STICK BACK</p> 	<p>Result A CLIMB</p> 
<p>RUDDER PEDALS NEUTRAL</p>  <p>STICK RIGHT</p> 	<p>Result A BANK *</p> 
<p>RIGHT RUDDER PEDAL FORWARD</p>  <p>STICK RIGHT</p> 	<p>Result A TURN *</p> 
<p>RIGHT RUDDER PEDAL FORWARD</p>  <p>STICK BACK AND RIGHT</p> 	<p>Result A CLIMBING TURN *</p> 
<p>RIGHT RUDDER PEDAL FORWARD</p>  <p>STICK FORWARD AND RIGHT</p> 	<p>Result A GLIDING OR DIVING TURN *</p> 

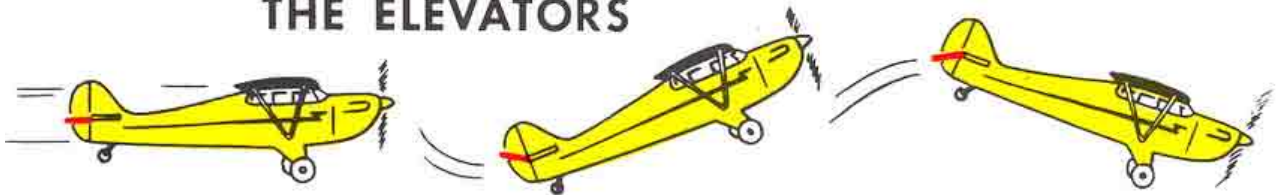
***These maneuvers are to the RIGHT. For maneuvers to the LEFT, reverse controls.**



When flying, an airplane responds to four elements which affect its flight. These are, as shown above:

1. Thrust—the forward movement of the plane through the air caused by the propeller or other means of propulsion. **2. Lift**—the effect of the wing surfaces. As air passes over *top* of wing surface, a partial vacuum is created—which provides the “lift” to hold the plane *up* as it moves *forward*. **3. Drag**—is the resistance of all exposed surfaces of the plane as it is moved through the air by “thrust.” **4. Gravity**—the pull of the earth *down*—the force which is counteracted by “lift” and “thrust.”

THE ELEVATORS



When you press back on the stick (pull it toward you) the elevators go up as shown above. This pushes the tail down and the airplane climbs. When you press the stick away from you (forward) the

elevators go *down* which raises the tail and makes the plane glide or dive (depending upon the amount of forward motion you give the stick).

AILERONS

AILERONS “NEUTRAL”



AILERONS SET FOR RIGHT BANK



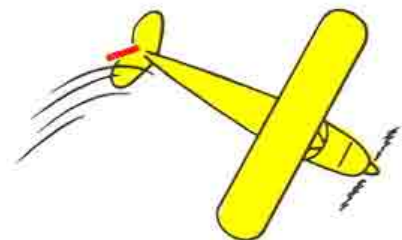
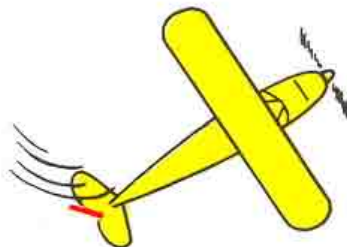
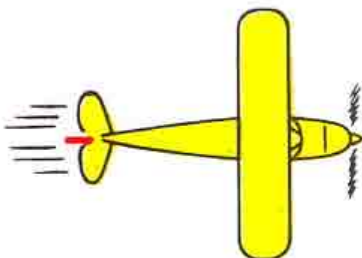
RIGHT BANK



When you press the stick to the *left*, the left aileron goes *up* and the right aileron goes *down*. This makes the left wing go *down* and the right wing go *up*, tilting the plane to the left. When you press the stick to the right, the right aileron goes *up* and the left aileron goes *down*—tilting

the plane to the right. When you hold the stick in “neutral” the ailerons are set to conform exactly with the trailing edges of the wings. In other words, when the stick is “neutral” the ailerons simply become part of the wings.

RUDDER



Pressing the *left* rudder pedal makes the rudder move to the *left*. This swings the nose of the plane to the left. When you press the *right* rudder pedal the rudder moves to the *right* which causes the nose

of the plane to move to the *right*.

Opposite page shows detail of the ailerons, elevators and rudder controls in the Piper Cub and how they are operated from dual controls in the cockpit.



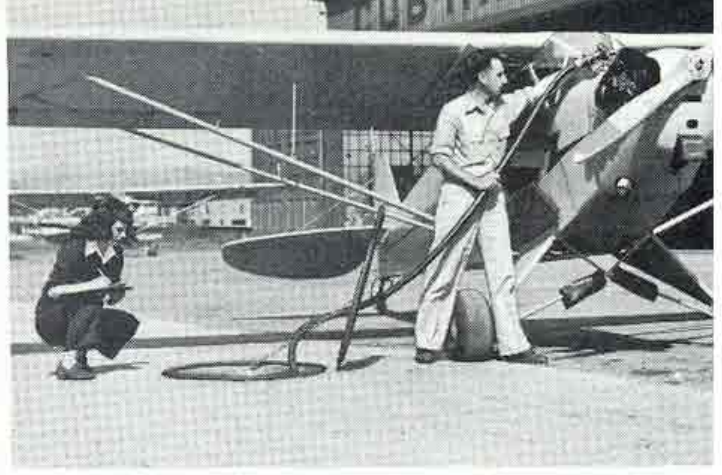
THERE are but four basic fundamentals in good flying technique; (1) straight and level flight, (2) the climb, (3) the glide and (4) the turn. Your eight hours of instruction preceding the solo will be devoted to mastering these simple fundamentals, along with take-offs and landings.

We've seen how various movements of the controls result in different attitudes of the ship. Now let's go along with a student in a Piper Cub Special on one of the first flights, and actually see how easy flying can be. On the following pages we have presented a typical early lesson. Each step is clearly illustrated and explained from the beginning of the flight to its completion. Positions of the controls for the take-off, climb, glide, turn and landing are shown, and the attitude of the ship for each position. Look over these pages and study the illustrations. Then, when you step into a Piper Cub and get ready for your first lesson, you'll be familiar with the fundamentals of flight, and your instructions will be all the easier and more enjoyable.

Of course, you cannot learn flying from a booklet, any more than you can learn to drive an automobile by reading about it. You must learn to fly in the air. But we hope the series on the next few pages will show you that the "mysterious art of flying" is really something that can be readily mastered by the normal individual in a dependable, easy-to-fly Piper Cub.



1. Airplane is pushed out of hangar into clear for inspection and general check before the flying lesson begins.



2. Always check the gas by the gauge and by looking into tank. Fill the tank when necessary.



3. Check the oil by removing the cap and looking at the oil stick.



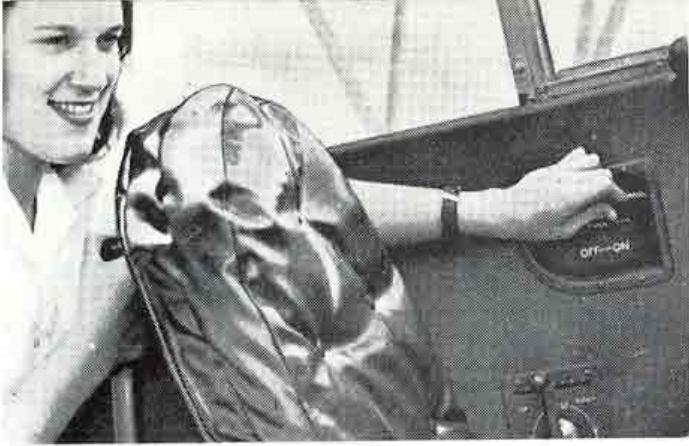
4. Place chocks securely in front of both wheels.



5. Get in ship and fasten safety belt.



6. Check rudder and stick controls for freedom of movement by moving them in all positions.



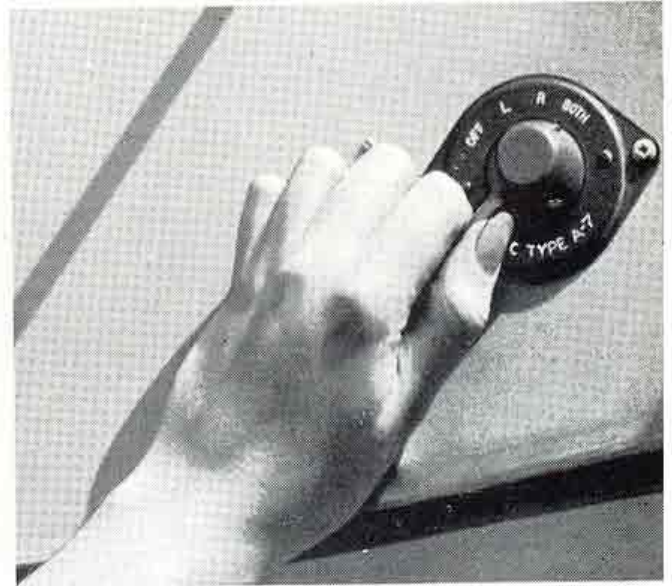
7. Push the fuel valve into the "ON" position.



8. Check the switch to make sure it is off.



9. Prop is pulled through once or twice by hand.



10. Turn on the switch to "BOTH."



11. Now the prop is swung through to start engine.



12. The chocks are pulled from in front of the wheels, using the ropes attached to them.



13. Check oil pressure gauge for normal reading.



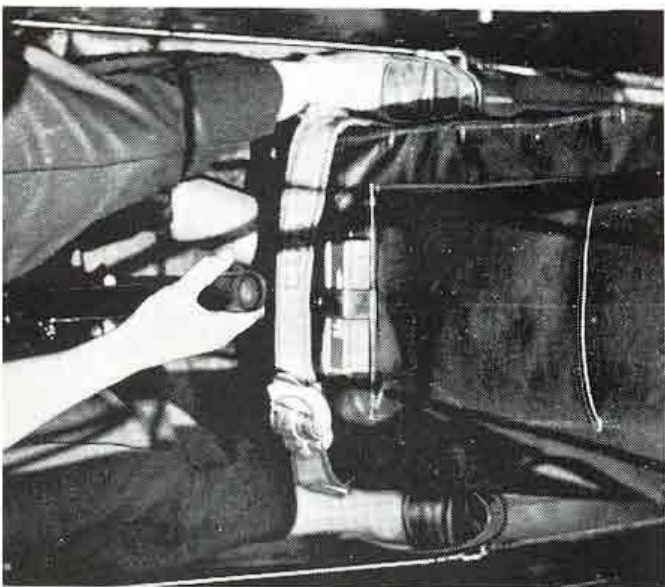
14. Close the doors and fasten them securely.



15. Observe the windsock and S-taxi to the runway. Always take off and land INTO the wind. Do not taxi faster than normal walking speed. Look around and ahead constantly for other aircraft.



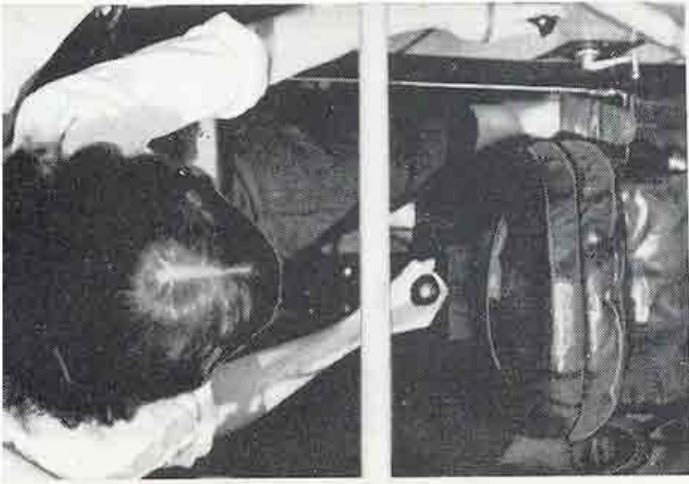
16. Near end of runway stop, apply brakes, advance throttle to 1400 RPM and check the magnetos with the tachometer. Check for other aircraft landing or taking off. If clear, proceed to position on runway.



17. Ease the throttle all the way forward. After a run of about 100 feet, push the stick forward to lift the tail.



18. With tail up, in level flight position, ready to leave the ground.



19. As the tail comes up, ease the stick back to neutral to keep level position.



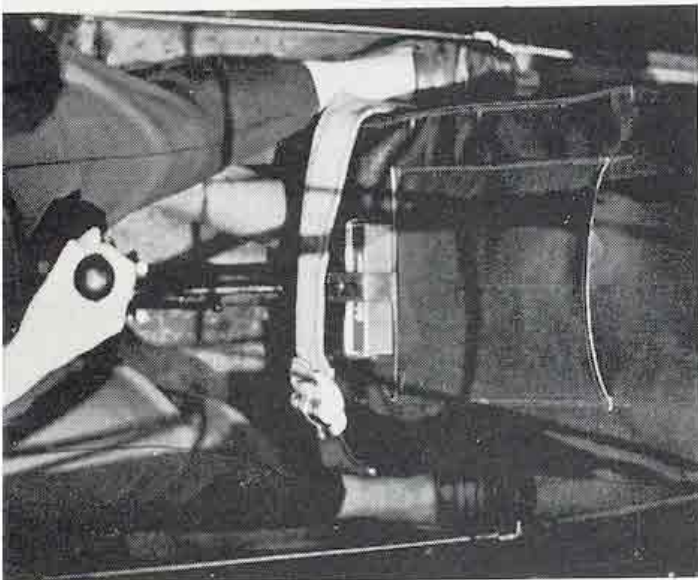
20. As the ship gains speed, slowly apply more back pressure to the stick.



21. The ship is now airborne. Upon reaching an altitude of about 10 feet, ease stick forward to neutral to let flying speed increase.



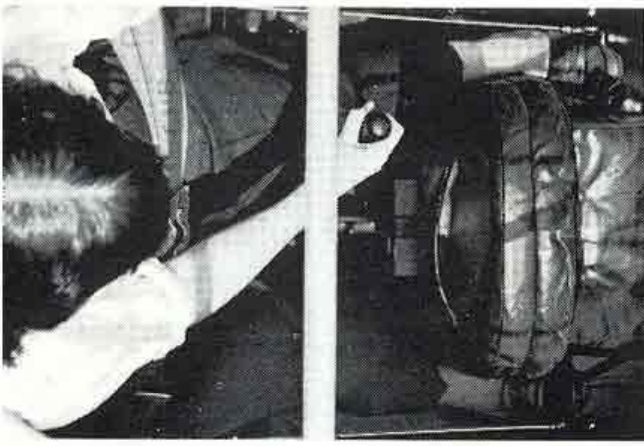
22. The ship is in level flight, just off the runway.



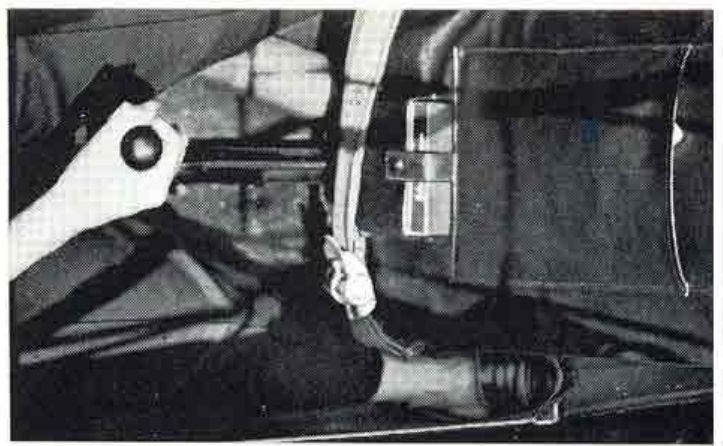
23. As flying speed increases, ease the stick back to normal climbing position.



24. Here the ship has started a normal climb, after gaining a safety margin of flying speed.



25. When an altitude of 400 ft. is reached make a level 90 degree turn to the left, with 30 degree bank by simultaneously pushing left rudder pedal and stick to left.



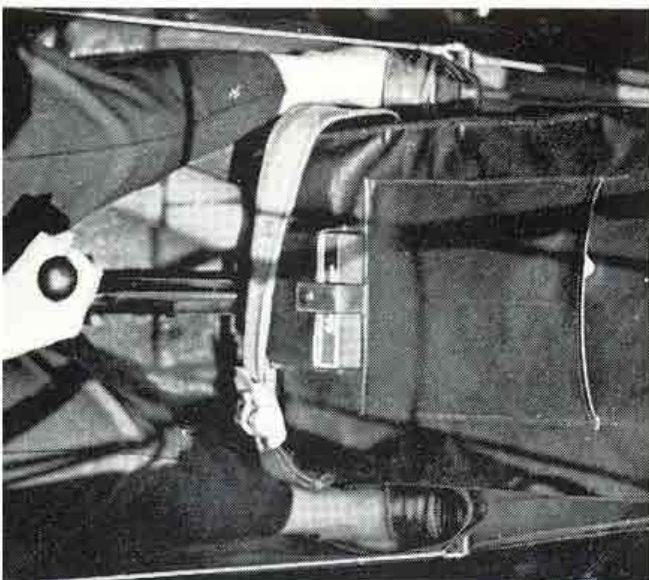
26. When desired degree of bank is attained, ease left rudder pedal and stick back to neutral.



27. Illustration shows ship in level turn to the left.



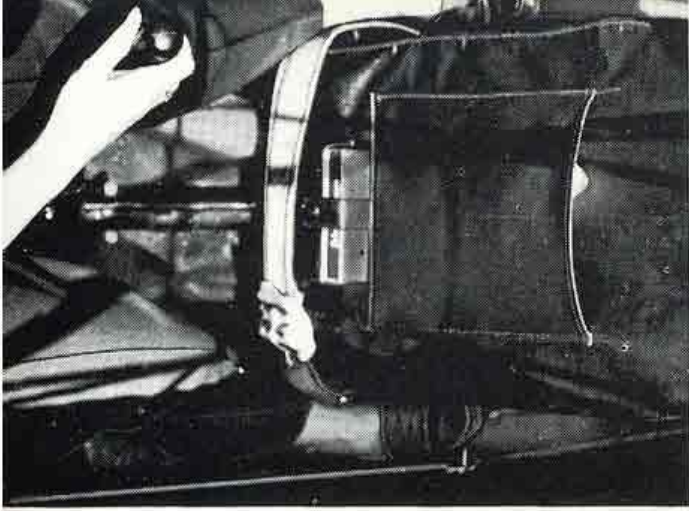
28. To recover from left turn, simultaneously push the right rudder pedal and stick to the right.



29. When ship has recovered from the turn, ease controls back to neutral.



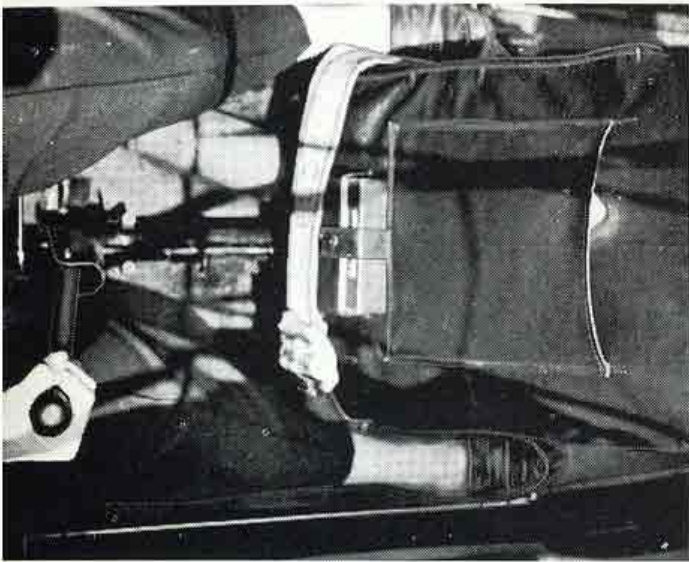
30. Now leave the traffic pattern with a 45 degree right turn with a 30 degree bank, by simultaneously pushing right rudder and stick. When correct bank is attained return controls to neutral.



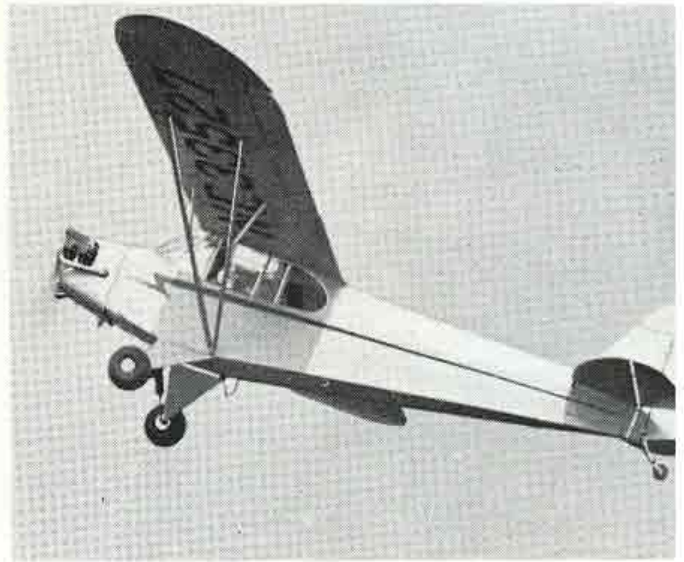
31. To recover from turn, simultaneously press left rudder and push left stick. As recovery is made return controls to neutral.



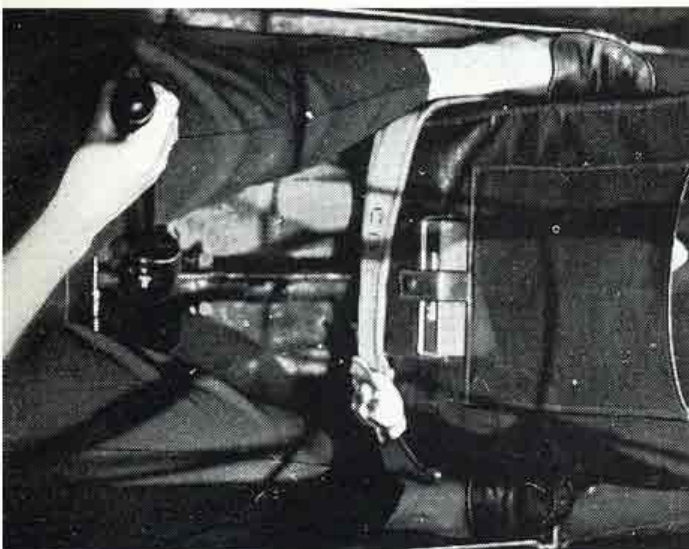
32. Then proceed to climb with throttle three-quarters full, applying back pressure to stick.



33. Now make a 90 degree climbing turn to the right with a 15 degree bank, by simultaneously pressing the right rudder, pushing stick to the right and slightly increasing back pressure.



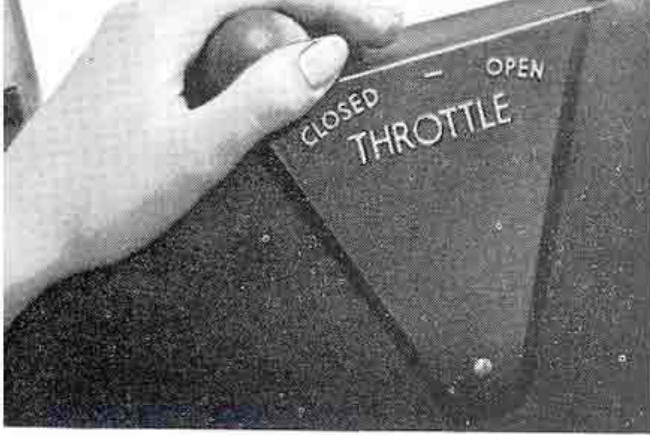
34. Here is the plane in a climbing right turn.



35. To recover from turn, simultaneously press left rudder and push left stick. As recovery is made, return controls to neutral, but still maintain back pressure on the stick.



36. Return stick to neutral, ease throttle back to cruising and maintain a straight and level course.



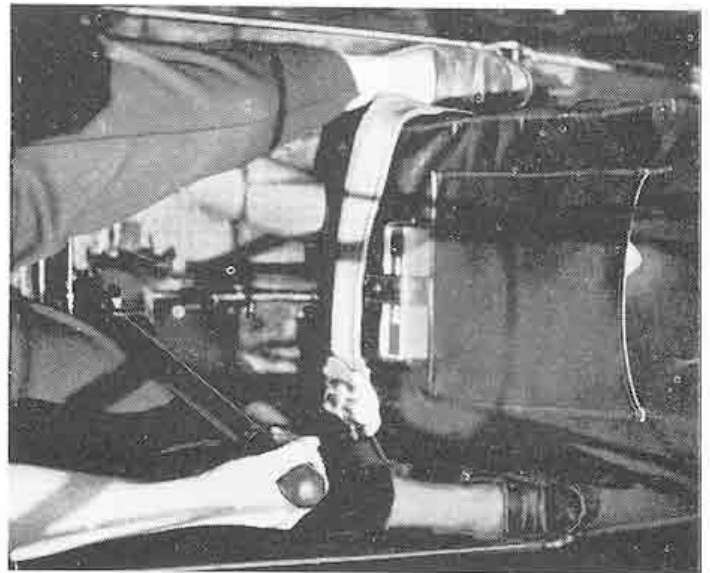
37. Now put the ship into a glide by easing the throttle all the way back and pushing the stick slightly forward.



38. Always pull on carburetor heat when in a glide.



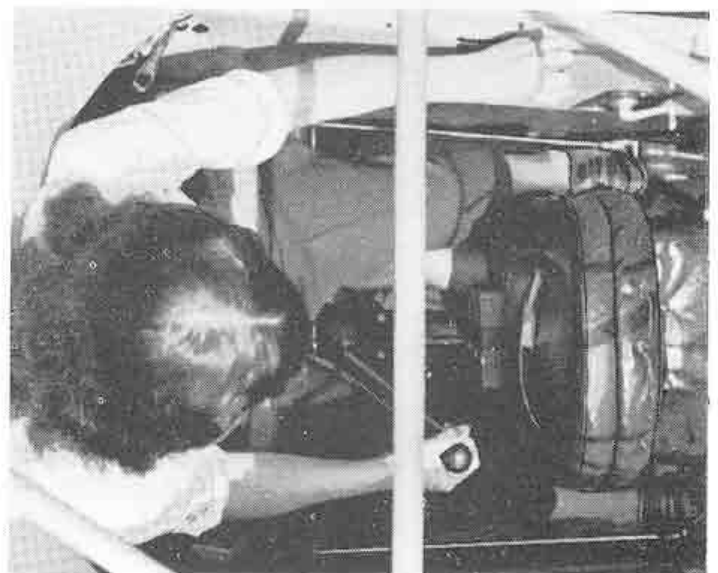
39. Ship is shown here in a normal glide.



40. Now make a 90 degree gliding turn to the right, with a 30 degree bank. This is done in the same manner as previous right turn, but the stick is slightly forward.



41. Recovery is made in the same manner as in previous right turn, but with the stick slightly forward.



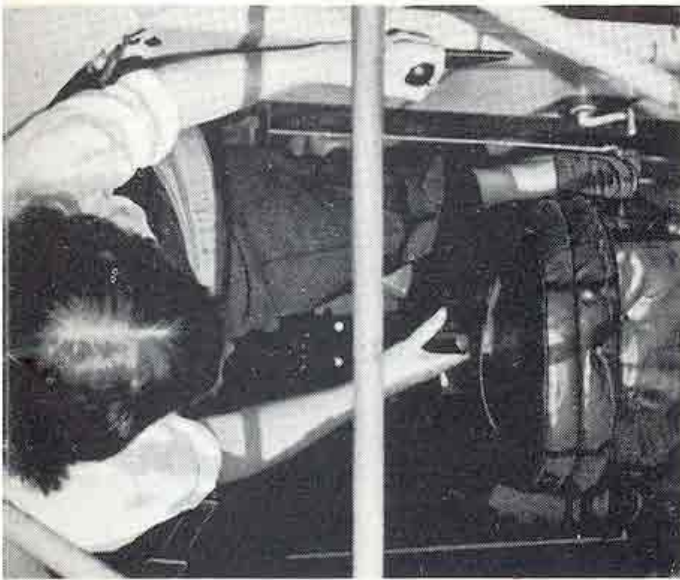
42. Advance throttle to cruising and move stick to neutral. Turn off carburetor heat, make a 90 degree level right turn to approach airport pattern at 600 feet altitude at a 45 degree angle.



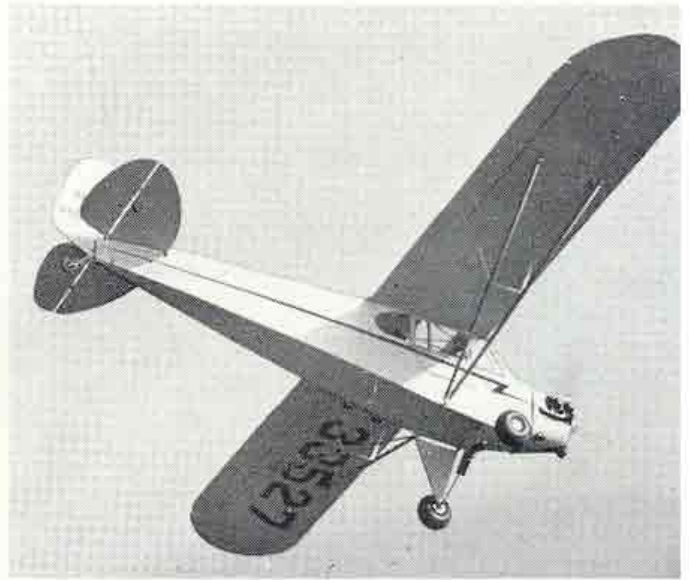
43. If the way is clear, make a 45 degree level turn to the right and swing into the airport pattern.



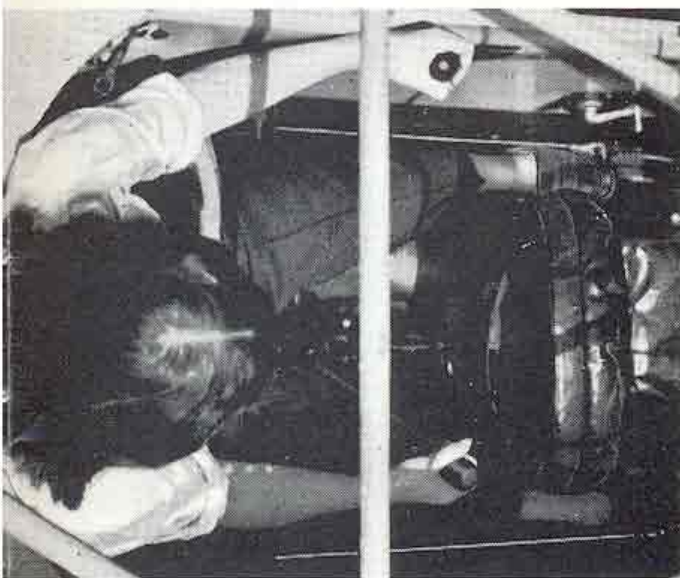
44. Now make a 90 degree level turn to the left as previously described and fly straight and level, paralleling the runway.



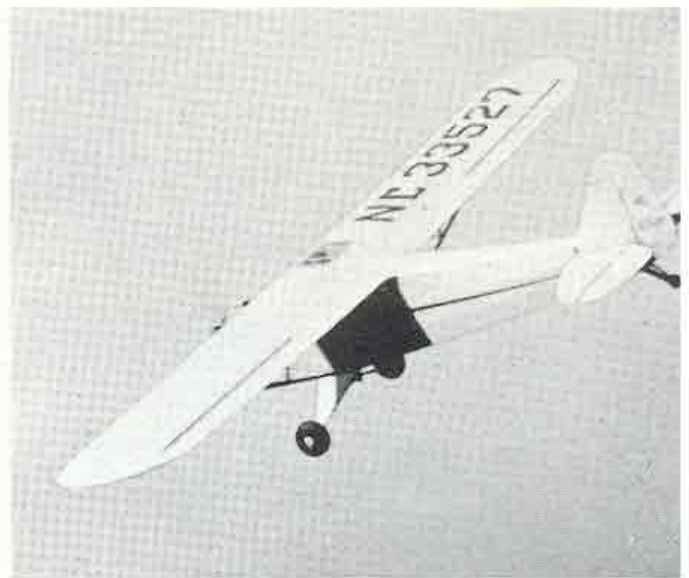
45. When parallel with the end of the runway, cut throttle all the way back, push stick slightly forward. Turn on carburetor heat and proceed in normal glide.



46. Now make a 90 degree gliding turn to the left, with a 30 degree bank, by pressing left rudder pedal and pushing stick to the left.



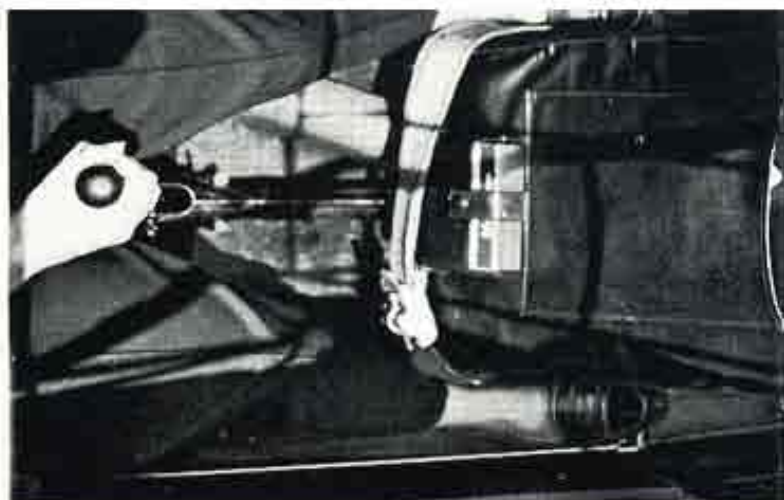
47. Recover with right rudder and stick to right. Neutralize controls with stick slightly forward. NOTE: Clear engine during glide by advancing throttle to cruising position and back.



48. Make another 90 degree turn to the left with a 30 degree bank, so as to line the plane up with the runway. Recover as in previous gliding turn.



49. When ship is about 15 feet above runway, slowly start to apply back pressure on stick to break glide.



50. Continue to increase back pressure so that when ship is about 2 feet above runway the stick is all the way back.



51. As flying speed is lost, ship will settle to ground in three-point position.



52. When ship has slowed down to approximately 15 m.p.h., turn off runway and S-taxi slowly toward the hangar, watching out for other ships.



53. Turn off switch, advance throttle full forward, then close throttle. Get out of plane and push it into hangar.

A WORD OF ADVICE FROM THE INSTRUCTOR

FLYING is fun, but to do it well you have to make it a practice to form good habits right from the beginning. Take each maneuver as it comes along and do your best to master it. Ask questions of your instructor. Practice when you're up solo. And always remember that the "hot pilot" of today isn't a death-defying daredevil. He's the common sense fellow who has learned his lessons well, takes pride in precision flying and follows the rules. Now go to it—and take real flying lessons from your Piper dealer.

FROM THE COCKPIT OF A CUB!



STRAIGHT AND LEVEL

As you sit in the rear (student) cockpit of a Piper Cub in straight and level flight, here is how the horizon looks. These pictures show normal front view as when you fly solo—with no instructor in the front cockpit.



30° LEFT TURN

Notice how, when you turn left at a 30° bank, the horizon seems to tilt to the right. With the nose in correct position for level flight the horizon line cuts right across the nose of the plane.



30° RIGHT TURN

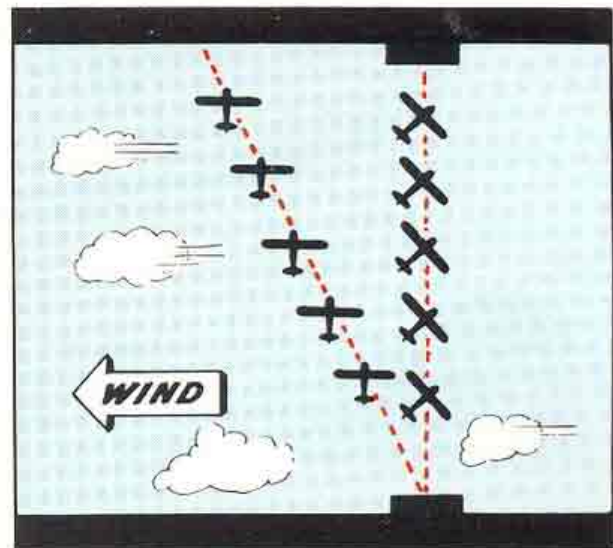
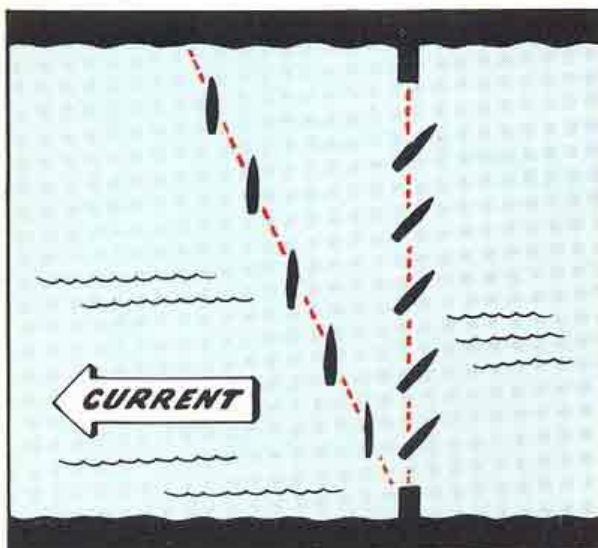
Same as a 30° level left turn only to the right. Horizon seems to tilt to the left. In gliding turns, the nose goes *below* the horizon and in climbing turns, the nose goes *above* the horizon.

GOOD PILOTS KEEP THEIR HEADS—LOOSE!

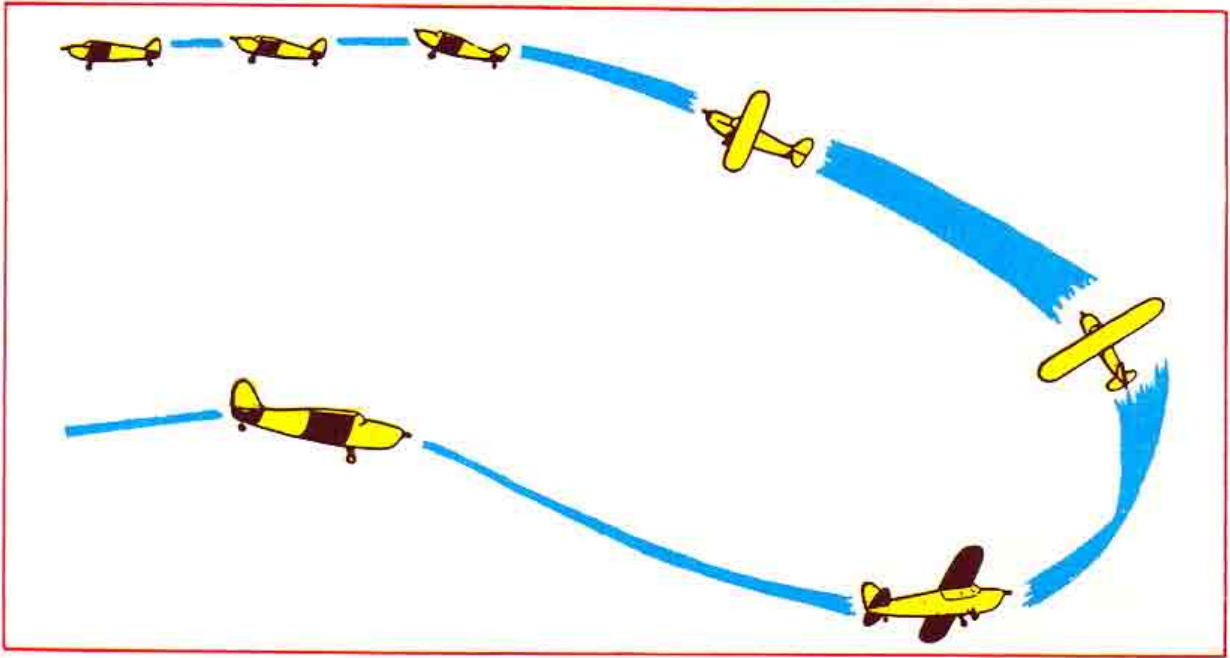
Good pilots never have stiff necks! As they fly they are constantly turning their heads from side to side—up and down—always checking to see that there are no other airplanes near. Traffic rules of the air are strict and all good pilots fly according to them. You will be coached on these traffic rules wherever or whenever you learn to fly.

WIND DRIFT CORRECTION

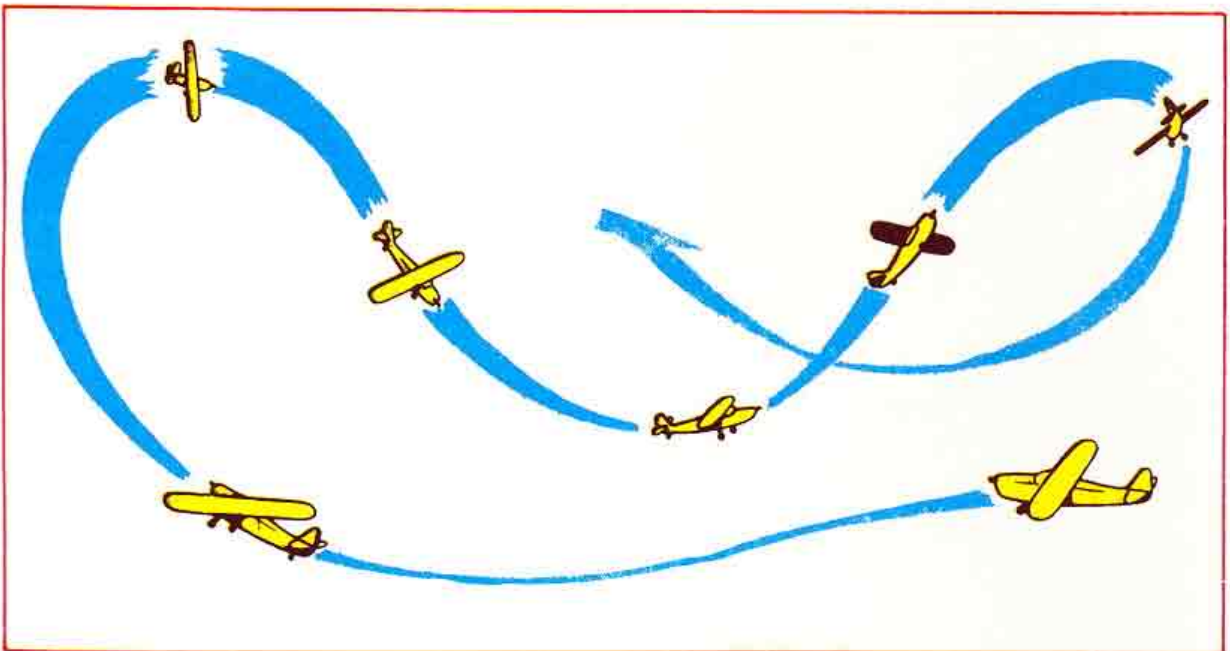
When flying, never forget that your plane moves *through* the air—yet *within* a mass of air. Suppose you were in a boat on a river and the current was from right to left as shown below at left. To get to a point on the opposite bank directly across from you, you would have to row your boat at an angle against the current as shown. Now look at the picture at the right below. See? It's the same way when you fly. The wind is just like the current of a river. You have to "allow" for it—or as pilots say, "crab into it" to keep the direction you want in relation to the ground. *Wind correction is one of the most important fundamentals of flight!*



SOME MANEUVERS THAT ONLY

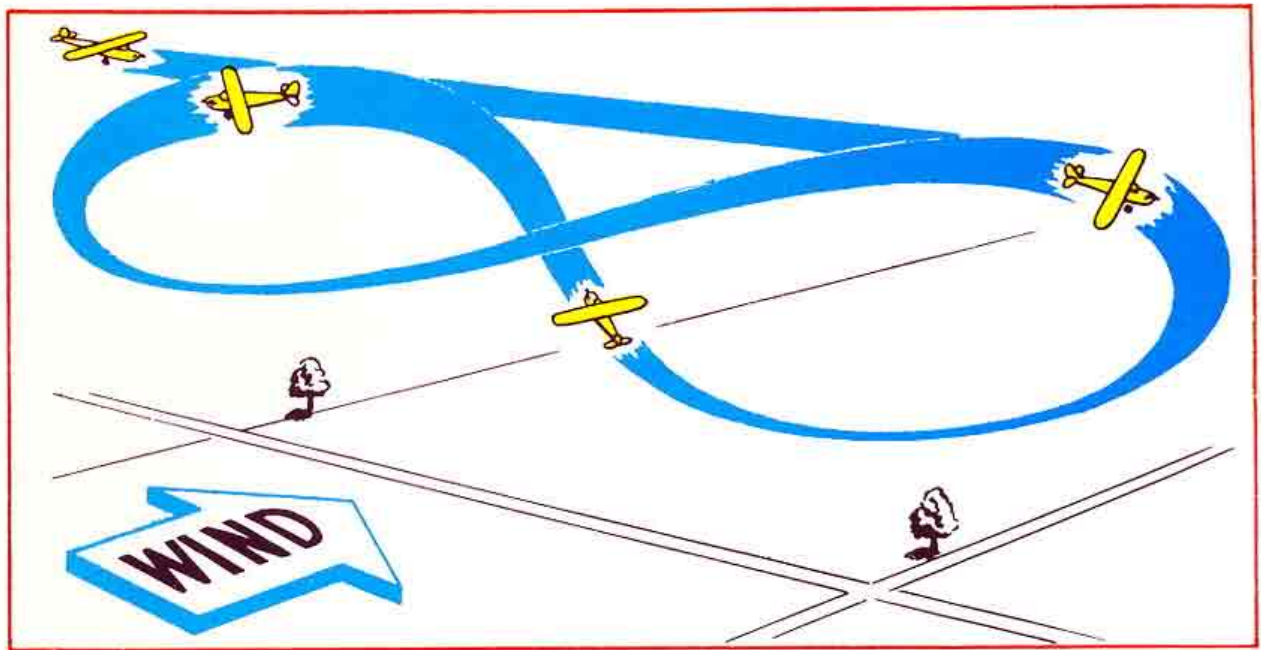


CHANDELLE This used to be called the “Castle Turn” because it was invented in World War I by Vernon Castle. It consists of a shallow dive, to gain extra speed, adding a bank of 45° and when the 45° is almost reached, applying back pressure to add *climb*. When about halfway through, the (recovery) roll out is started so that when you are heading in the opposite direction—a change of 180° —your wings are level but you are still in a climb. Then lower the nose to level flight.

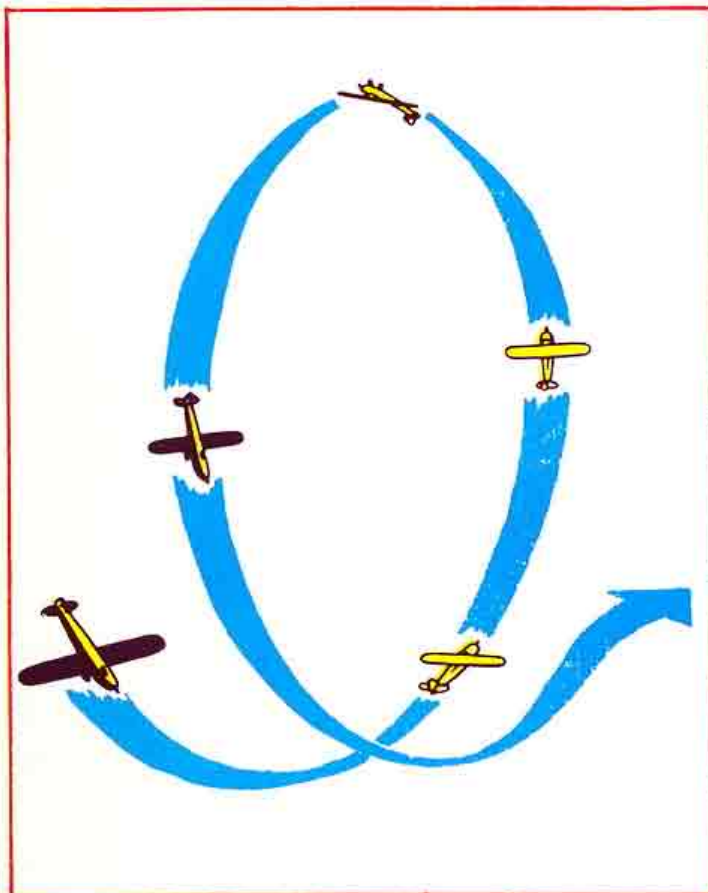


LAZY 8's These are a combination of a climbing turn, a turn over the top (like half an orange) and a turn down, with the airplane constantly changing its attitude in relation to the ground. Both the Chandelle and the Lazy 8 are known as “timing maneuvers” because they require an exact timing of control “pressures.”

EXPERIENCED FLIERS CAN DO



PYLON 8's This maneuver not only requires timing but takes into account wind drift because it is flown cross wind. You must stay the same distance away from the pylon all the way around, although, on one side the wind blows you toward the pylon and on the other side blows you away from it. You must use a 30° bank on the side of the pylon towards the wind and a 45° bank on the side away from the wind. Pylons should not be trees, etc., but intersections of roads or field lines.



LOOP Now we're getting to where flying is really fun. To loop an airplane you first push the nose down into a dive and gain speed. As your speed picks up you must gradually close the throttle so your engine doesn't "rev." up too fast. When you have gained speed, press back firmly on the stick so the nose comes up fairly fast and when you are climbing straight up open the throttle wide. Now just hold the stick set about half way back. Don't move it back any farther. As you go over the top and start down, gradually close the throttle again. You will go under the bottom and can then level out, or pull up into a brief climb to gain some altitude before leveling out—and that's all there is to it.

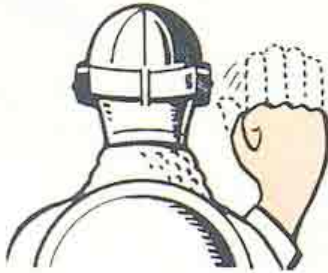
**LEARN
WHAT YOUR
INSTRUCTOR
MEANS BY
THESE HAND
SIGNALS**



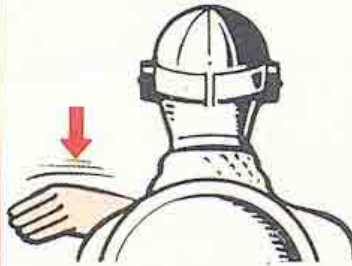
1. Shakes Stick and Points to Student
Student Take Controls



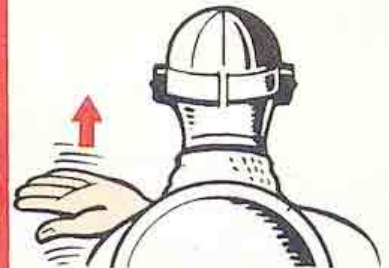
2. Taps Self on Head
Student Release Controls to Instructor



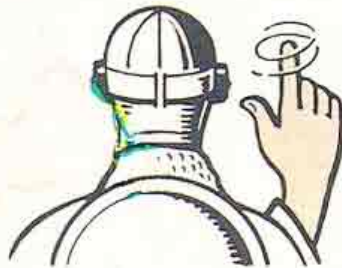
3. Instructor Opens and Closes Hand
Student Is Tense . . . RELAX



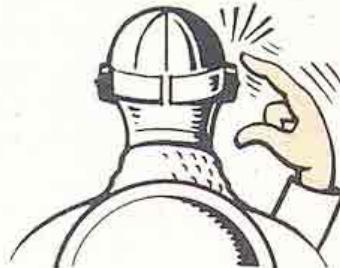
4. Downward Motion of Palm
Toward Wingtip
Student Bank or Lower Indicated
Wing



5. Upward Motion of Palm
Toward Wingtip
Student Raise Indicated
Wing



6. One Finger, Circular Motion
Check Your Tachometer and
Throttle Setting



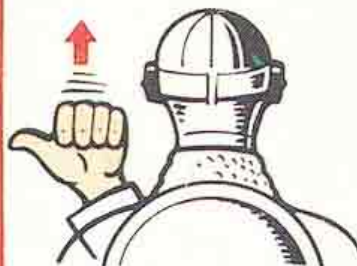
7. Instructor Taps Ear
Student Apply Rudder Right or
Left as Indicated



8. Instructor Points Right or Left
Student Change Flight Direction
as Indicated



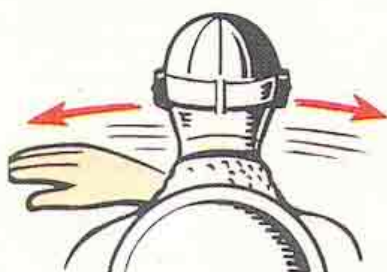
9. Hand Extended with Thumb
Toward Student
Hold and Maintain This Heading



10. Upward Motion with Palm
Toward Student
Raise or Elevate Nose of Plane



11. Down Motion of Hand
Lower or Depress Nose of Plane



12. Hand, Palm Flat, in
Sweeping Horizontal Motion
Level Off or Maintain Altitude



13. Opening and Closing
Thumb and Finger
Check Allimeter



14. Taps Student on Head
PLEASE Release Controls to
Instructor