ground operations

chapter 2

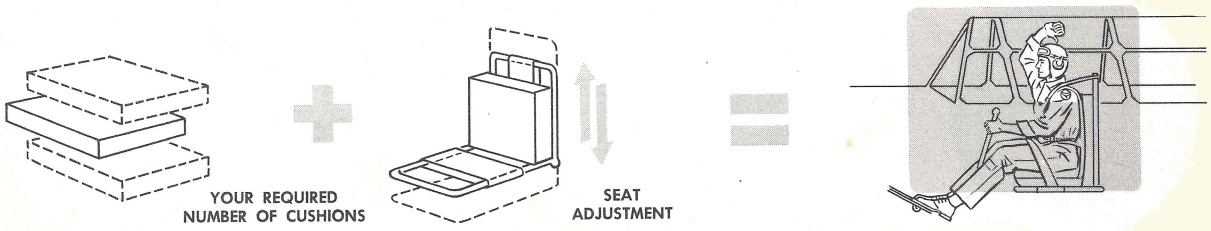
INSPECTIONS, CHECKS, AND PROCEDURES

The instructions for inspections, checks, and procedures as outlined in the T. O. will be complete in most instances and will require no further explanation. During normal operation it will not be feasible for you to carry the T. O. with you while making your inspections and while flying; therefore, a simplified check-list has been prepared for your use.

This check-list should be in your possession at all times while you are on the flight line. In order to utilize it effectively, you must be thoroughly familiar with the contents of Section II of the T. O. The simplified check-list is a reminder of the items you must check and the method to use in performing the checks.

Each time you fly, your position in the aircraft, after adjustment of the seat and rudder pedals and during the pre-starting procedure, should be the same. Your instructor will help you determine the number of cushions you should use and the correct position of the seat and the rudder pedals. The seat should be adjusted to give your head a clearance of approximately six inches from the top of the canopy. To obtain this desired position when seated in the cockpit, clench your hand into a fist and extend your thumb. With your thumb pointed down and resting on the top of your head, the other end of your fist should be touching the top of the closed canopy. As soon as you are properly adjusted in the seat, open the canopy. Whether you are short or tall, your eye level in this position should be the same as that of all other students.

The rudder pedals should be adjusted so that with the balls of your feet on the pedals, you have full use of the rudder controls. In this position you will normally have a slight bend in your knees. The chief consideration is that you should be comfortable in the cockpit. Nothing should restrict your movement of the controls.



You Should Obtain Desired Position when Seated in the Cockpit

TAXIING

Taxiing is the movement of the aircraft under its own power on the ground. You must know how to control the aircraft on the ground and thoroughly understand taxiing procedures. Safe taxiing requires constant alertness.

Characteristics Affecting Ground Control

The aircraft controls are designed for maximum effectiveness in flight. They have a limited use on the ground, however, and you must learn to use them properly while taxiing. At normal taxi speed (about the speed of a brisk walk) you will not feel air pressures on the flight controls as you will in flight.

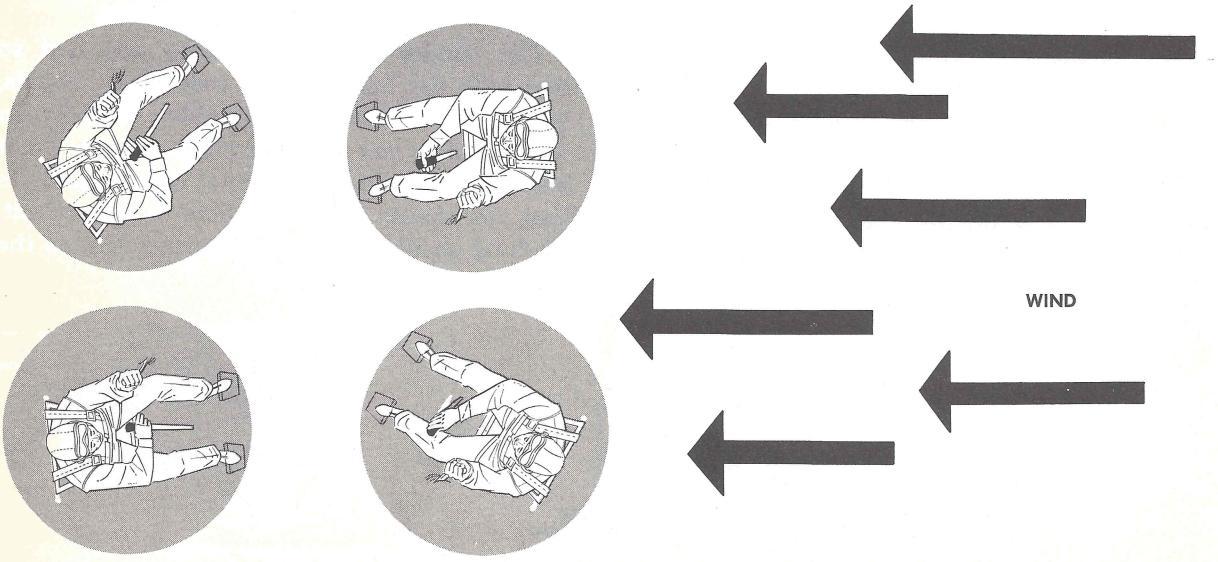
While taxiing you use the controls in a similar manner to their use in flight, but through a greater control range. For example, you use much more rudder movement while steering the aircraft on the ground than is normally used in flight.

When taxiing into the wind, you should hold the stick all the way back. This causes the elevators to be moved into the UP position. Thus, wind cannot get under the elevators, but instead strikes the elevators on the top and tends to hold the tail of the aircraft on the ground.

When taxiing down-wind, you should hold the stick slightly forward of neutral, causing the elevators to be in the DOWN position. This also keeps the wind from getting under the elevators and makes it strike them on the top, thereby holding the tail on the ground.

When taxiing in a cross-wind, you should hold the stick all the way over into the wind, causing the up-wind aileron to be in the UP position and reducing the tendency of the wing to come up from the impact of wind striking underneath. This also causes the down-wind aileron to be in the DOWN position, causing more drag on the down-wind wing. This principle reduces the tendency of the aircraft to swing into the wind, making it easier to steer. This same principle will be used later as an aid for directional control during cross-wind landings.

If you are taxiing down-wind in a cross-wind, however, you should hold the stick slightly forward of neutral and away from the wind. This causes the aileron on the up-wind wing to be in the DOWN position. Since the wind is striking the wing from behind, this reduces the tendency of the wind to get under the aileron and wing.



Stick Positions While Taxiing

Visibility and Attitude

As you sit in the cockpit of the T-6 on the ground, you become aware of the restrictions to your forward vision. Because of this visual limitation, you must "S-turn" the aircraft from side to side in the direction you are taxiing. Notice carefully the relationship of the horizon to the engine nacelle. This attitude is known as the three-point attitude of the aircraft. You will have occasion in the future to refer to this attitude in your power-off stall series and especially during landing practice.

Weather-vaning Effect

While taxiing you will notice a tendency of the aircraft to nose into the wind. This is a result of the weather-vaning characteristic of the aircraft and is caused by the aircraft's attempt to streamline itself into the wind. Because of this tendency you must be very alert when taxiing, especially when the tailwheel is unlocked.

Steerable Tailwheel and Brakes

The steerable tailwheel is constructed so that in the LOCKED position both the rudder and the tailwheel turn at the same time. Thus, when you apply pressure on the left rudder, the tailwheel turns with the rudder and turns the nose of the aircraft to the left. A turn to the right is accomplished in a similar manner by applying pressure to the right rudder. When the tailwheel is unlocked it is full swivel and non-steerable. In this case steering may be accomplished with the brakes. Consult your T. O. for the exact degree of rudder travel and type of tailwheel lock that is installed on your particular aircraft.

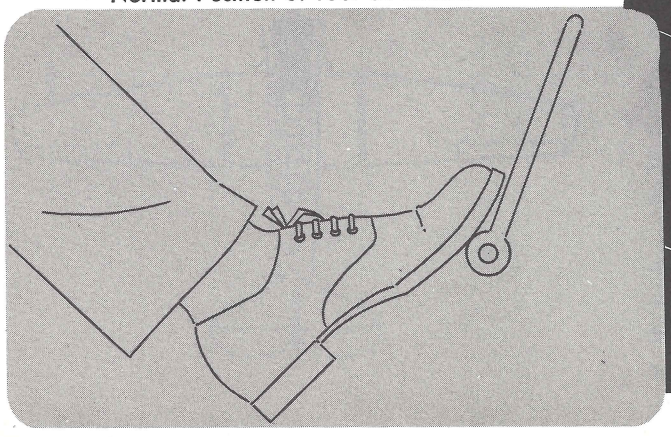
Brakes operate independently. Left-brake pressure operates only the left wheel brake, and right-brake pressure operates only the right wheel brake. Pressure on both brakes simultaneously is necessary to stop the aircraft.

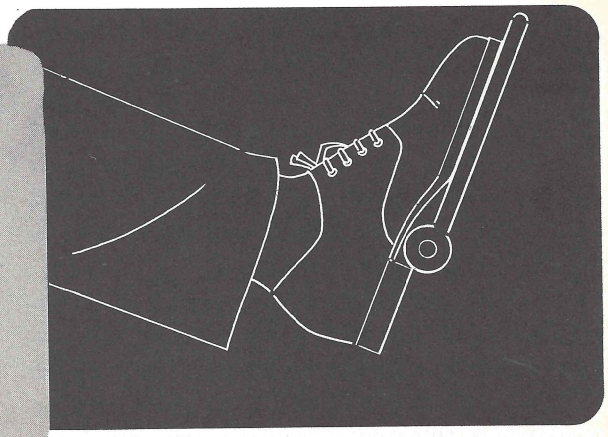
Taxi Tips

You should taxi with your heels on the cockpit floor and with the balls of your feet on the rudder bar. Move your feet up on the rudder pedals only when it is necessary to depress the brakes. The brakes should be used to stop the aircraft at a desired point, to maintain a safe taxi speed, or to make a sharp turn with the tailwheel unlocked. Apply the brakes smoothly and evenly at all times and always use caution in applying them.

A note of caution is injected here. Abrupt application of both brakes while taxiing can cause the aircraft to nose over. If an abrupt application of brakes is made, intentionally or otherwise, and the nose of the aircraft goes down, pull the stick straight back as far as possible and apply power. If no danger of a collision exists, you should release the brakes. This action, if applied in time, will in most cases produce sufficient airflow over the elevator to force the tail down.

Normal Position of foot on Rudder





Normal Position of Foot on Brake

A "nose over" can occur also when taxiing over soft or muddy sod if the sod is soft enough to produce sufficient retarding action. Here again the control and power action described above should be used.

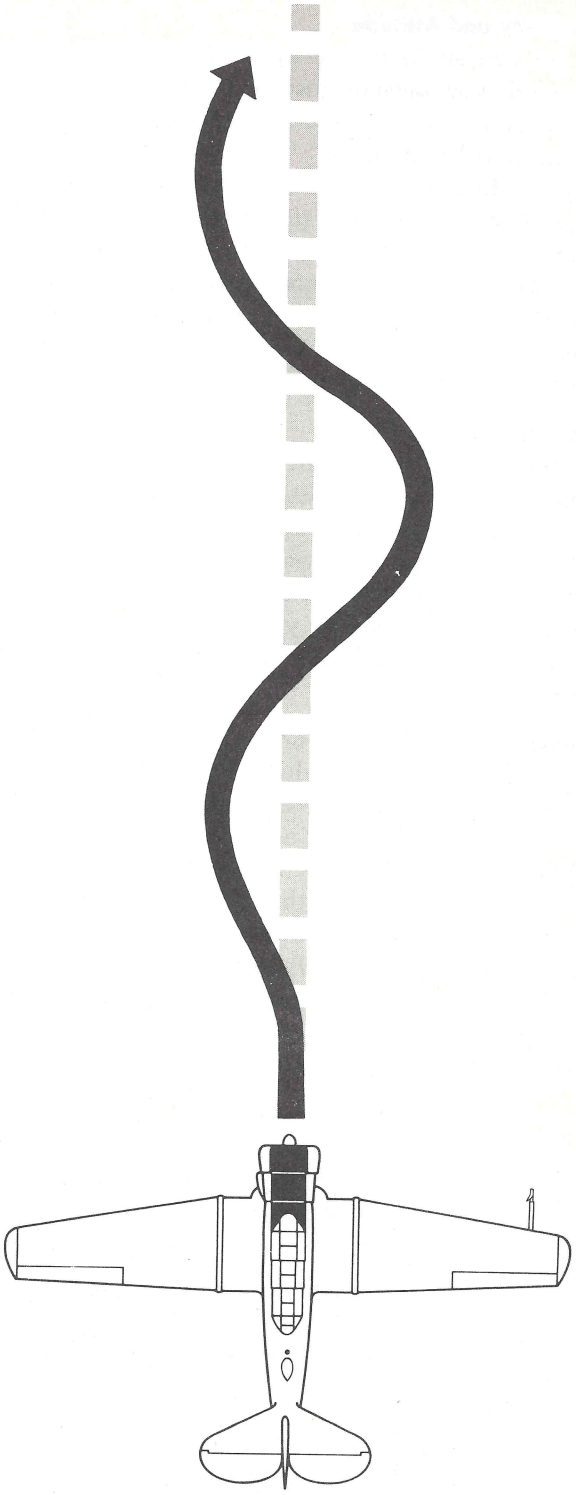
When starting to taxi, always test the brakes for proper operation. Do this by allowing the aircraft to move slowly forward and then applying pressure smoothly to both brakes, bringing the aircraft to a complete stop. Also, when starting to taxi, you will find it necessary to use a comparatively large amount of throttle to begin moving the aircraft. But once the aircraft begins to move, ease the throttle back to the normal taxi position. If conditions permit, as the aircraft starts to move, begin a turn to clear the area in front of you.

When taxiing in and out of the parking line, you sometimes will have to make a sharp turn. At any time you want to make a sharper turn than is possible with the rudder only, do not use the brake without unlocking the tailwheel lock. Many students attempt to make this turn without unlocking the tailwheel lock. Since they are so keenly interested in taxi spacing, they have a tendency to use brake and try to make the turn against the tailwheel lock.

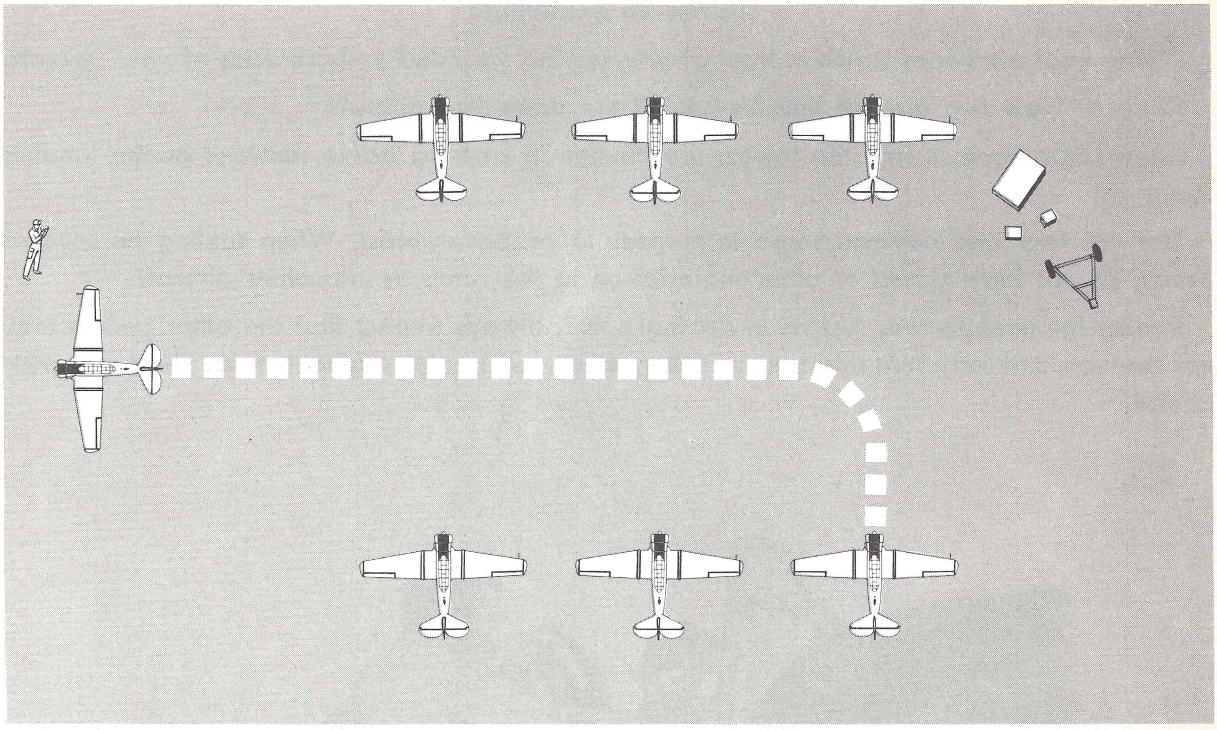
You should never taxi straight ahead for any appreciable distance. Instead, make a turn to the left or right by applying pressure to the rudder in the desired direction of turn.

This turn should be continued until the ground path along which you intend to taxi is visible. As soon as this path can be seen, apply pressure to the opposite rudder pedal and cause the nose to swing back through the path and on to the opposite side until the intended ground path can be clearly seen again. This is called "S-turning" while taxiing.

In taxiing, you will have to learn how to anticipate the movements of the aircraft and apply rudder pressure accordingly. The aircraft will continue to turn slightly after the rudder pressure is released; therefore, you must release it before you intend to make a change of



"S-Turning" while Taxiing



Leaving the Parking Area

direction. This anticipation of when to initiate turning action can be learned only by practice, but it should not present any difficulty.

While taxiing, be alert at all times and look around to be sure your aircraft's wings will clear all obstructions. If at any time you have any doubt about the clearance of the wing tips, stop the aircraft and get someone to guide you past the obstruction. If no help is available, cut the engine and let the ground crew move the aircraft. *Always play it safe.*

Safety in Taxiing

When leaving a parked position or when parking an aircraft, always make certain that your intended ground path is clear of obstructions. In particular, watch out for battery carts, fire extinguishers, cowlings, etc. When you are taxiing on the ramp or near other aircraft, your safe taxiing speed is never faster than a brisk walk. Remember the wings; clear the area on each side as well as in front of you. In congested areas be sure to use wing walkers to help you avoid obstructions.

To be sure that your aircraft will not collide with another object, constantly clear the area. *Know* the location and movements of everything in your taxi path. You must be aware of other aircraft taking off, landing, and taxiing. Show consideration for the right of way of those landing and taking off. To really *clear* the area, your eyes must cover almost a complete circle. Your neck is a swivel, and your head must move from side to side with your eyes continuing the turn to the limit of the eye muscles. Never allow your eyes to freeze on one object. You need a mental, up-to-the-second picture of the area around you. You are flying the aircraft until you have cut the switches and finished the last entry in the Form I. No matter how exciting your flight has been, while you are taxiing is not the time to think about it. As in every other phase of flying, plan your task in advance and be constantly on the alert as you follow your plan.

Things To Remember

Divide your attention; watch in front of you, behind you, and on both sides of your aircraft.

Keep at least two aircraft lengths behind the preceding aircraft.

Keep radio contact with the tower; use caution in crossing active runways or the landing area.

Use courtesy and common sense in respect to propeller blast. When taxiing on sodded areas, do not blow stones or other material on to the ramp or into other aircraft.

Expect the unexpected. Just as in driving a car, always expect that the other person may not see you and may turn into you, or may act as you do not expect him to. Think and plan ahead.