must be carefully selected, taking into account the wind velocity and groundspeed so that an excessive bank is not required later on to maintain the proper ground track.

### COMMON ERRORS DURING GROUND REFERENCE MANEUVERS

1. Faulty entry technique.
2. Poor planning, orientation, or division of attention.
3. Uncoordinated flight control application.
4. Improper correction for wind drift.
5. An unsymmetrical ground track during S-Turns Across a Road.
6. Failure to maintain selected altitude or airspeed.
7. Selection of a ground reference where there is no suitable emergency landing area within gliding distance.

## TRAFFIC PATTERNS

A traffic pattern is useful to control the flow of traffic, particularly at airports without operating control towers. It affords a measure of safety, separation, protection, and administrative control over arriving, departing, and circling aircraft. Due to specialized operating characteristics, airplanes and helicopters do not mix well in the same traffic environment. At multiple-use airports, you routinely must avoid the flow of fixed-wing traffic. To do this, you need to be familiar with the patterns typically flown by airplanes. In addition, you should learn how to fly these patterns in case air traffic control (ATC) requests that you fly a fixed-wing traffic pattern.

A normal traffic pattern is rectangular, has five named legs, and a designated altitude, usually 600 to 1,000 feet AGL. A pattern in which all turns are to the left is called a standard pattern. [Figure 9-18] The takeoff leg (item 1) normally consists of the aircraft's flight path after takeoff. This leg is also called the upwind leg. You should turn to the crosswind leg (item 2), after passing the departure end of the runway when you are at a safe altitude. Fly the downwind leg (item 3) parallel to the runway at the designated traffic pattern altitude and distance from the runway. Begin the base leg (item 4) at a point selected according to other traffic and wind conditions. If the wind is very strong, begin the turn sooner than normal. If the wind is light, delay the turn to base. The final approach (item 5) is the path the aircraft flies immediately prior to touchdown.

You may find variations at different localities and at airports with operating control towers. For example, a right-hand pattern may be designated to expedite the flow of traffic when obstacles or highly populated areas make the use of a left-hand pattern undesirable.

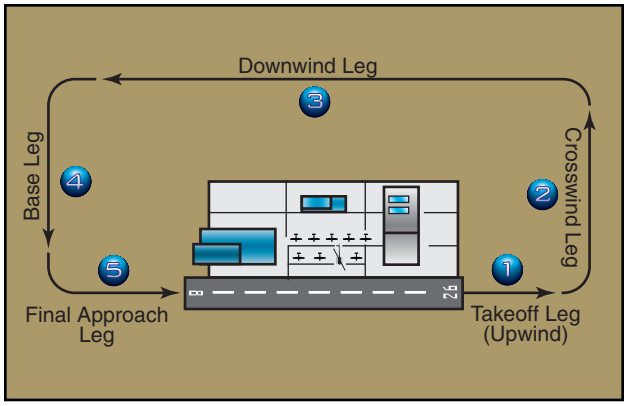


**Figure 9-18. A standard traffic pattern has turns to left and five designated legs.**

When approaching an airport with an operating control tower in a helicopter, it is possible to expedite traffic by stating your intentions, for example:

1. (Call sign of helicopter) Robinson 8340J.
2. (Position) 10 miles west.
3. (Request) for landing and hover to...

In order to avoid the flow of fixed-wing traffic, the tower will often clear you direct to an approach point or to a particular runway intersection nearest your destination point. At uncontrolled airports, if at all possible, you should adhere to standard practices and patterns.

Traffic pattern entry procedures at airports with an operating control tower are specified by the controller. At uncontrolled airports, traffic pattern altitudes and entry procedures may vary according to established local procedures. The general procedure is for you to enter the pattern at a 45° angle to the downwind leg abeam the midpoint of the runway. For information concerning traffic pattern and landing direction, you should utilize airport advisory service or UNICOM, when available.

The standard departure procedure when using the fixed-wing traffic pattern is usually straight-out, downwind, or a right-hand departure. When a control tower is in operation, you can request the type of departure you desire. In most cases, helicopter departures are made into the wind unless obstacles or traffic dictate otherwise. At airports without an operating control tower, you must comply with the departure procedures established for that airport.