

calculating fuel needs are explained in our *Top Performance* flight-sim manual.

#### Visual Flight Rule 4 Choose the Right Altitude

Aircraft flying VFR must maintain prescribed cruising altitudes most of the time. Simply stated, these cruising levels are odd altitudes plus 500 feet when traveling eastward magnetic and even altitudes plus 500 feet when traveling westward magnetic. Exceptions are when the aircraft is cruising below 3,000 feet (914 meters) AGL, when turning or when in a holding pattern of two minutes or less.

Class A airspace above 18,000 feet (5,486 meters) MSL is not practical for visual flight. Although regulations say VFR is permissible in Class A airspace with specific ATC authorization, flying visually at such high altitudes does not make much sense. Visual references on the ground are too far away for usefulness unless the aircraft is flying around very high mountain peaks.

Visual flight altitudes for various headings are shown in the table on page 166.

#### Visual Flight Rule 5 Maintain Minimum Safe Altitudes

Maintaining *minimum safe altitudes* (MSA) is a prudent practice. Minimum safe altitude is typically considered 1,000 feet (305 meters) above any obstruction such as a tower, building, or mountain. But even that altitude is not always safe. The table on the following page depicts these minimums.

**Skeletal Structures.** Maintain at least 2,000 above ground level to avoid "skeletal structures" such as radio and TV towers. Also, stay at least 1,000 feet (305 meters) to any side of a skeletal structure to avoid its guy wires, which usually cannot be seen until fewer than 100 feet (30 meters) away. At normal cruising ranges, that is usually only a few seconds of time. In the real world, skeletal structures are scattered about the landscape, very densely in urban areas. Flight simulators provide some skeletal structures.