

The Meaning of Aerobatics:

Maneuvers in which an aircraft is flown under precise control in unusual attitudes (the position of an aircraft determined by the relationship between its axes and a reference such as the horizon). A myriad of aerobatic maneuvers exist, some of the better-known being rolls, loops, stall turns and tail-slides. The term aerobatics came into use in early 1914.

Sportsman to Unlimited Aerobatic Explained.

When you hear the word aerobatics for the first time, you immediately think that everybody has the same skill level or that the fact that your friend or spouse will put themselves in danger, because all you remember are those crazy pilots observed at an airshow.

In competition aerobatics we have different classes, from beginner (sportsman) to semi crazy (unlimited). Each of these classes will allow the pilot to push his own envelope in order to gain the skills to master his current level before attempting the next higher level.

These different competition levels were created by experience pilots and judges to safeguard the sport of aerobatic flying.

We teach beginner aerobatic pilots that basic maneuvers consisting of a spin, Loop, stall-turn and rolls. From here onwards all other maneuvers to follow will be an extension of the foundation imbedded during the initial training. Loops will be broken up into ½ loops. Rolls will be included in vertical up / down lines. Inverted spins after upright spins, Snap rolls after aileron rolls.

Each maneuver or figure has a K value indicating its difficulty. An easy maneuver will have a low K value for instance a Loop has a K value of 10. A straight roll's has a K of 8. So when the pilot flies the loop with a roll over the top, the total K will be 18 for that single figure.

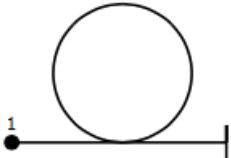
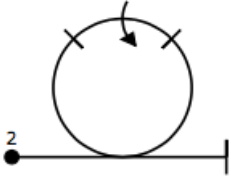
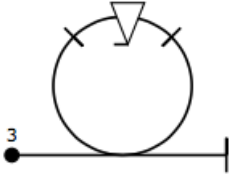
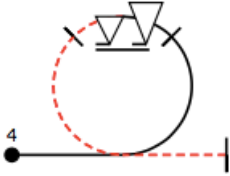

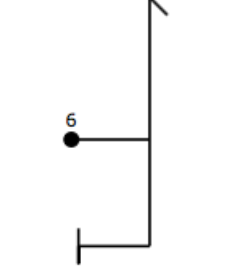
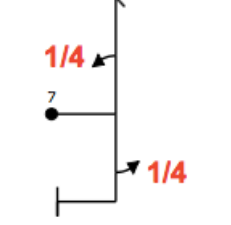
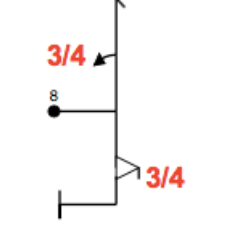
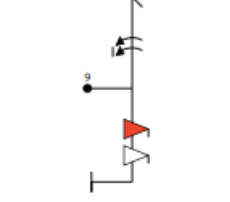

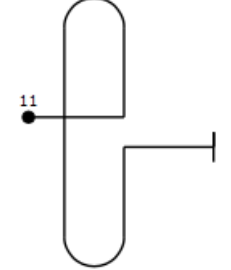
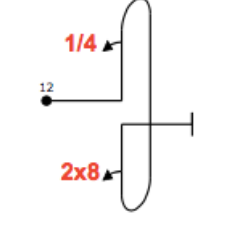
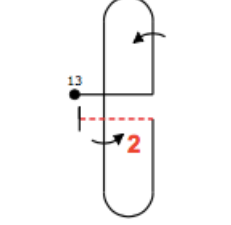
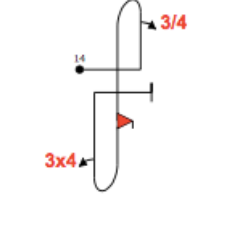

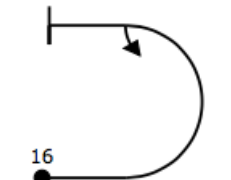
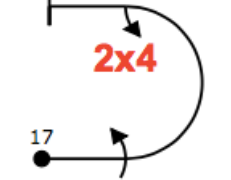
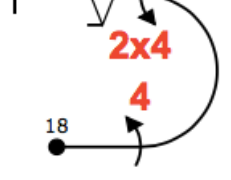
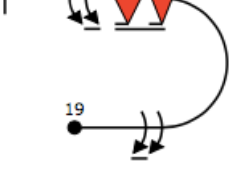

The flying sequence will be a combination of figures totaling the maximum allowed K value for each individual competition level. In order to beef up the max number of figures that can be flown more difficult types of rolls will be added to the figure in order to cater for the competition class. The different competition classes are:

Sportsman
Intermediate
Advanced
Unlimited

In Sportsman the pilot flies a normal round loop where as the intermediate pilot flies that same loop with a roll element on top. By the time the pilot has progressed to unlimited he will have to be able to fly the loop from upright to inverted upwards or downwards with forces on the body of up to 12G swings from a single half roll at the bottom of a loop flown downwards.

This takes the pilot hundreds of hours from sportsman to Unlimited. Most pilots only progress to Advanced level. Aircraft like RV's can not compete higher than sportsman level. Yak-52 and most Pitts models will compete perfectly up to intermediate level. Extra 300, Slick 360 and some Pitts models compete up to advanced level. For Unlimited the power to weight ratio required is only achievable by a few aircraft Sukoi-26/31, MX2, S-Bach and the Slick540.

Below is list of figures showing the difference between Sportsman to Unlimited for each figure and how the K value is loaded with rolls.

 <p>Sportsman 7.4.1.1(10) K: 10</p>	 <p>Intermediate 7.4.1.1(10) 9.1.3.4(8) K: 18</p>	 <p>Advanced 7.4.1.1(10) 9.9.3.4(11) K: 21</p>	 <p>Unlimited 7.4.2.1(12) 9.9.3.6(14) K: 26</p>	 <p>Snap Roll 1.1.1.1(2) 9.9.3.4(11) K: 13</p>
 <p>Sportsman 5.2.1.1(17) K: 17</p>	 <p>Intermediate 5.2.1.1(17) 9.1.1.1(6) 9.1.5.1(2) K: 25</p>	 <p>Advanced 5.2.1.1(17) 9.1.1.3(10) 9.9.5.3(11) K: 38</p>	 <p>Unlimited 5.2.1.1(17) 9.1.1.8(18) 9.10.5.4(13) 9.9.5.4(11) K: 59</p>	 <p>Negative Snap Roll 1.1.1.2(3) 9.10.3.4(13) K: 16</p>
 <p>Sportsman 8.8.2.1(19) K: 19</p>	 <p>Intermediate 8.8.2.1(19) 9.1.1.1(6) 9.8.1.1(7) K: 32</p>	 <p>Advanced 8.8.1.1(18) 9.1.1.4(12) 9.2.5.4(9) K: 39</p>	 <p>Unlimited 8.8.2.1(19) 9.1.1.3(10) 9.10.10.2(15) 9.4.1.3(12) K: 56</p>	 <p>1 1/2 Roll 1.1.1.3(2) 9.1.3.6(10) K: 12</p>
 <p>Sportsman 7.2.2.1(6) 9.1.3.2(4) K: 10</p>	 <p>Intermediate 7.2.2.1(6) 9.1.3.4(8) 9.4.3.2(5) K: 19</p>	 <p>Advanced 7.2.2.1(6) 9.4.3.4(11) 9.4.3.2(5) 9.9.3.4(11) K: 33</p>	 <p>Unlimited 7.2.1.1(6) 9.1.3.8(12) 9.10.8.6(19) 9.1.3.6(10) K: 47</p>	 <p>4-point Roll 1.1.1.1(2) 9.4.3.4(11) K: 13</p>

Loop – Stall Turn - Humpty Bump – Half Loops