Of course, it is necessary in making a balloon ascension, to thoroughly understand what to do under all conditions, and if one were to use poor judgment a beautiful trip might end disastrously, and there really need be no danger in landing if one is careful to select the proper place in which to come down.

This may be done by the use of the valve line and the ballast.

If the balloon is steadily descending and will come down in a body of water, two or three handfuls of sand will generally check the descent and the balloon will stay at the same altitude until you see a more suitable place in which to bring it down.

This is done by a pull on the valve line which runs through the centre of the balloon.

BALLOONING AS A SPORT.

BY

A. W. ROLKER.

THIS is the latest sport wherein the American of wealth and daring now gratifies his craving for new sensations.

However dangerous or otherwise, not since the automobile took hold in this country has a sport spread so rapidly as ballooning. In 1905 the Aëro Club of America was organized, and in February, 1906, at West Point, the club had its first ascension; yet during that brief time many men prominent in finance, in science and invention, and in sport have joined the club, whose purpose it is to advance the developments of aëronautics, to encourage aërial navigation and to organize excursions, races, and expositions, and to maintain club headquarters and aërodromes provided with gas generators and other equipments necessary to ballooning and air-ship navigation. Among those who were the first to own balloons, who have placed orders for balloons with American or foreign makers, or who are otherwise interested in the new sport are such men as William K. Vanderbilt, Jr.; Col. John Jacob Astor, Cortlandt F. Bishop, Harry Payne Whitney, O. H. P. Belmont, Professor M. I. Pupin, Dr. Alexander Graham Bell, Colgate Hoyt, Hiram S. Maxim, Pierre Lorillard Ronalds, Augustus Post, Charles J. Glidden, Edward C. Boyce, Professor David Todd, Joseph Hoadley, Captain Homer W. Hedge, Joseph Leiter, A. N. Chanler, Major C. S. Miller, Leo Stevens, Dr. Julian P. Thomas, J. C. McCoy, and many others. In all, about 300 members, men of wealth and position, men scattered throughout the States as far west as Portland, Ore., have joined this club, which owns its own portable hydrogen gas generators, which is keeping accurate record of all flights made, and which at this writing is making preparations for the first balloon race, to be held at a suitable location.

Whatever the choice of the individual, the most favored balloons for sporting purposes in this country are made of cotton, and in size are a happy medium between the all-powerful and cumbersome and the little one-man balloon suitable for a comparatively brief ascension. Either ordinary illuminating gas or hydrogen, which is twice as strong although seven times as expensive as coal gas, is used for inflation. The diameter of these balloons varies between 20 and 50 feet, the volume of gas capacity between 10,000 and 70,000 cubic feet, and the passenger capacity between one and seven persons aside from the necessary luggage, instruments, and ballast. The cost of balloons varies, of course, according to their size. You can buy a one-man cotton balloon that will hold $25 or $30 worth of gas and will lift you to a height of 10,000 feet or keep you afloat between ten and twenty-four hours at a height of 2000 feet, for something like $400. But rarely is the one-man balloon in favor. A two- or three-man balloon measuring 44 feet in diameter, containing 18,000 cubic feet of hydrogen and capable of lifting three passengers, a 400-pound car, and 250 pounds of ballast, you can buy for about $600. And a five-man balloon made of cotton, measuring 50 feet in diameter, containing 70,000 cubic feet of gas and able to lift five men, a 900-pound car, and 450 pounds of ballast you can buy for about $1000. The cost of the gas which is to lift you on your flight through space varies from $1 a thousand cubic feet for coal gas to $7 a thousand cubic feet for hydrogen.

The envelope of the modern balloon is not sewed together as were old-style balloons. Instead of the bag being made up of segments joined on edge and running perpendicularly from the top to the bottom of the sphere, thus permitting a rip in any of these pieces to extend itself from the top to the neck of the balloon, the seams run horizontally as if the bag were made up of a series of cloth rings about a foot wide, each "ring," in turn, consisting of smaller pieces, or templates, measuring from 14 to 18 inches in length. In this manner the aëronaut is assured that in case of a tear, which is apt to happen during inflation, the rip will not extend farther than the nearest seam.

But what strikes you most as wholly inadequate and absurdly small is the little car or basket your pilot expects you to get into. The sides of the basket extend between your thighs and your waist line, depending upon your own height. Instead of being round as of old and thus permitting you to be rolled as if in a barrel in case your balloon runs away with you upon landing during a high wind, the car is rectangular, almost square, insuring that when dragged it slides over the ground on a side. A three-man car, weighing 400 pounds, consisting of inch-and-a-half-thick wicker and carrying 250 pounds of ballast besides anchor, ropes, etc., seems to you scarcely bigger than a large-sized wash basket and measures a puny 3¼ by 3 feet.