

Aero Club of India

Aerosports activities

Aero modeling



What is an Aeromodel ?

It is a toy aeroplane, which actually flies. It does taxiing, takes off, flies, does aerobatics and lands back. It can practically do everything, which a real aeroplane can do.

About the sport-

Aeromodelling is a simple and safe aerosport. All that what it needs is volunteers for aeromodeling, quality equipment, coaching of a qualified instructor and an open area to begin with. The age group from 12 to 18 years is considered ideal to start aeromodeling.

It normally takes about 20 hours of flying training for a novice to be able to fly an Aeromodel all by himself/herself. Cost of 20 hours flying works out to about Rs.3000. This cost shall include instructional charges, Petrol for aeromodels and minor repairs.

Objective behind the sport-

The basic aim of introducing aeromodelling is not only to have fun or to introduce a hobby, but is to educate young children basics of flying which includes Theory of Flight, Aerodynamics till constructing aeromodels.

Materials used-

Aeromodels are made of Balswood and covered with Monkote and a miniature stick is used to fly it.

Types of aero models –

Aeromodels can be basically divided into two parts.

1. One which is Powered with an engine known as Airplanes and;
2. The other which is without an engine known as gliders.

Both are flown with controls from ground.

PROMOTION OF AEROMODELLING IN THE COUNTRY

ACI procured 40 Aeromodels which include:

1. 10 PT-20 Trainer aircraft model
2. 10 Super Sportster 20 models
3. 20 Glider Spirit 78.5 models
4. 16 Parasails
5. 13 Parachutes (Skydiving equipment)

With the procurement of the above aerospots equipment, ACI would be in a position to promote Aeromodelling, Parasailing and Parachuting among the youth in the country.

The Aeromodels belonging to ACI have been allotted **ABSOUTELY FREE** to the following Institutions:-

S.No.	Name of Institution	Type of Model/QTY.		
		PT-20	Superster-20	Glider Spirit 78.5”
01.	Kendriya Vidyalaya Sangathan		5	5
02.	Mount St. Mary’s	1		1
03.	Air Force Adventure Foundation	1	2	3
04.	Kendriya Vidyalaya, M.B. Road	1		1
05.	AFGJI, Subroto Park	1		1
06.	Delhi Public School	1		1
07.	Mira Model School	1		1
08.	Kendriya Vidyalaya, Andrews Ganj	1		1
09.	Kendriya Vidyalaya, Delhi Cantt.	1		1
10.	Modern School, Barakhamba Road		1	1
11.	Mata Jai Kaur Public School (Ashok Vihar)		1	1

BALLOONING



What are they made of?

The envelope is made of about 1000 sq. metres of reinforced nylon fabric called rip-stop nylon. It is very light but very strong. The fabric is chosen particularly because it does not support a flame and retains its strength in such a way that any tears will not propagate.

How big are they?

Diameter of an average envelope is 17 metres, height is 24 metres. Its volume is 2,100 cu. metres.

What kind of fuel is used?

Common propane or butane is used. It is carried in liquid form, under pressure, in the tanks, and routed in the burners in flexible hoses. There it is atomized from the heat and ignited as it is directed upwards into the balloon. The flame may shoot as far as 2.3 metres in the wide open blast that the pilot controls.

How do they inflate them?

A balloon is quite unwieldy on the ground, especially in gusty winds; much like a great sail. You need at least five people to handle the balloon. A fan is most commonly used to fill the envelope with ambient air. Then as the air is heated with the burners, the balloon rises to a vertical position.

How high can they go?

Flight in this type of balloon of over 12,000 metres has been recorded, but is rare. The sport of ballooning is most rewarding at 60-160 metres, floating over the countryside.

How fast do they go?

As fast as the wind blows. But if it is higher than 13 kms. per hour at ground level, the balloons normally are not going to inflate.

How long can they stay up?

Normally about two hours depending upon the ambient (outside) air temperature. and on weight carried. Some are equipped with enough fuel to stay up for over 20 hours to establish distance and duration records.

How do they steer the thing?

Generally speaking, you don't. It goes where the wind goes. The trick is to pick an altitude that has the wind direction you want. Surface winds are usually always blowing 90 degrees opposed to the winds 1000 metres above the ground, sometimes even 180 degrees and are reasonable predictable.

BUNGEE JUMPING

What is it?

Bungee Jumping is a fast picking up adventure sport where a sports person takes a leap and jumps from a higher place say a Crane, Tower, Bridge or static platform with the help of a specialist Bungee Jumping equipment.

Procedure involved-

Here one is tied from his ankle and takes a free fall dive of about 100 to 200 ft. and then is pulled back or dropped down in a controlled manner. In Bungee jumping use of quality equipment and selection of Bungee jumping site are most important to ensure safety.

MOST ADVENTUROUS AERO SPORT!

GLIDING



What are Gliders?

Gliders are aircraft with fixed wings but with no power source of their own. Also known as sailplanes, gliders have been at the forefront of aeronautical innovation since the earliest days of aviation history. It was no mean achievement when Otto Lilienthal's monoplane glider flew distances of up to 300 meters (about 1000ft.) between the years 1893 and 1896. Today, sailplanes have evolved into sleek aircraft using the latest technologies available to designers and incorporate lightweight but extremely strong materials such as carbon, bonded glassfibre and plastics and fitted with onboard computers, avionics and GPS navigation systems. Soaring techniques have also developed with better knowledge of meteorology, and pilots have now flown distances exceeding 2000 km on one flight and the world altitude record now stands at an astonishing 49,009 ft. which is much higher than the service ceilings of most passenger jets.

Did you know-

All aircraft are able to glide. So if all the engines on a Boeing 747 for instance are turned off the aircraft will begin to descend in a glide. One of the most spectacular aircraft, which glides to a landing, is the space shuttle as it flies without power upon re-entry into the atmosphere of the earth. Gliders have all the basic controls of an aircraft, except power. Hence, glider pilots are trained to be exceptionally good airmen as they are able to fly an aircraft over long distances and cruise at high altitude without the aid of an engine. In order to do so, glider pilots have to fly very precisely ensuring that the aircraft moves through the air as efficiently as possible generating the least amount of drag. While landing the Glider, there is no second chance, no option to abort a landing and use the power of an engine to go around for another attempt.

HANG GLIDING



How is it carried out?

Hang gliding is carried out from hills with the help of trikes. Trikes are made of Aluminum in solid frames and the wings are made of Decoran fabrics.

Procedure involved-

Here the sports person flies the trikes, that is Hang glider by shifting his body weight. One can soar for hours using thermals like gliding and then land at a predetermined target safely.

Hang-gliding is a very specialist sport and is a very dominating in terms of professional ability.

MICROLIGHT FLYING



What is it?

Microlight flying is similar to flying of an aero plane.

Engine Weight-

The only difference being that the low powered engine is used on airframe, which is lighter in weight. Initially, microlight started using a Motor cycle engine, presently 'ROTAX' engine is most popular.

Categories of microlights-

It has two categories, one is the conventional control Microlight. This means that the flying method and techniques are like airplane. The second is weight shift type of microlight, here the flying techniques are similar to flying of Hang-gliding. Both types encourage aviation and make flying affordable.

Uses-

Microlight is coming up in a big way in the field of sports aviation. It is also being used for spraying pesticides on crops and agricultural lands, transporting a person from place A to place B which are near by and even people have started doing Skydiving from it. As on date, there are lot of restrictions on flying microlights in India from security angle, yet it is gaining momentum and getting popular.

PARAGLIDING

How it is performed?

Paragliding is done with the help of a Para glider. Para glider is a big conical shape ram air Canopy with a harness. This can be done from a height i.e. jumping from a hill or using a winch. Paragliding is an advanced kind of parachuting where one needs greater care and higher extent of training. It is very popular in mountain regions and is fast picking up Airsport in the country.

Types of models-

It has two models. One is solo and second is tandem. A trained Paragliding pilot can fly solo whereas a Paragliding pilot can fly Tandem and he can carry a passenger who does not know any Para gliding. It is very popular at tourist places where one can pay and have joy rides or learn flying commercially.

PARASAILS

What is it?

Parasail is the simplest and safest aerosport today. Parasailing is done by using an ascending Parachute canopy.

Procedure involved-

A Jeep, Gypsy or a boat, are used as Prime mover. Here the parasailer is attached using a rope from the prime mover to the Parasailing canopy. As the prime mover moves forward the sports person runs to takes off. Depending upon the winds it takes 10 to 100 steps to take off.

Who all can participate?

One can do the parasailing and attain the height from 100 ft. to 500 ft. depending upon the length of rope and the area available for prime mover to move. As the prime mover slows down, the Parasail starts descending, the instructors gives a soft touch landing by using his proficiency to make the sports person do a walk up landing. This sport can be picked up by any volunteers who can run about 50 mts. and can jump from the height of a study table.

Training duration –

The total time required for briefing and training for a joy rider will be about 15 minutes and for one to become professional Parasailer and instructors, a training of One week to two week is considered adequate. This sport is most popular in the country today but only on land. Rest of the world parasailing is more popular on water carried out with the help of a boat.

SKYDIVING



What is it?

Skydiving is an advanced form of parachuting which is carried out using a Parachute system from higher heights which can be gained using a helicopter, aero plane, Hot Air Balloon or so.

Procedure involved –

In Skydiving the Skydiver takes a leap from the skies at a higher height such as 12000 ft and falls free till about 3000 ft. and then opens his Parachute himself, glides the canopy and lands at a pre-determined target on ground.

Skydiving is always done using two parachutes one main and one for emergency attached to a single harness. An automatic opening device is also used with the systems to ensure safety. In the Free fall mode the skydiver falls at the speed of 176 ft. to 400 ft. per second.

NOTE: This is a high risk activity, where if proper training is not imparted, or laid out procedures are not strictly followed, or sub standard and Serviceable equipments are not used, it can result into serious injuries, or even fatal. This sport is once again gaining popularity in the country.