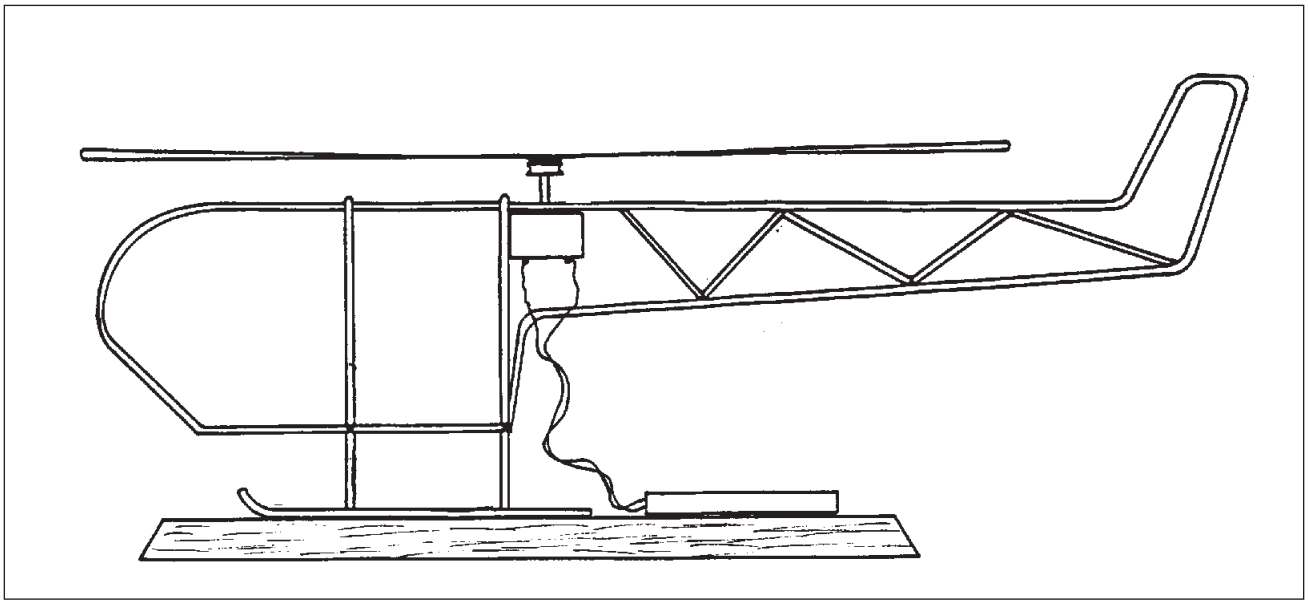
OPITEC

124.047

Solar Helicopter



Contents:

4	Welding rods	2mm dia x 500mm
1	Welding rod	1mm dia x 500mm
1	Solar motor	
1	Solar cell	400mA
1	Ply sheet	6 x 150 x 210mm
1	Insulated wire	200mm
1	Motor pulley	

Please Note

The OPITEC range of projects is not intended as play toys for young children.They are teaching aids for young people learning the skills of Craft, Design and Technology.These projects should only be undertaken and tested with the guidance of a fully qualified adult.
The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation!

Please read through the plans before starting this project

Cut and bend the metal rods to the sizes and shapes shown in the plans and solder them together. The finished model can be either glued or screwed to the plywood base.The motor should be fixed to the model with two or three spots of solder, but tin the area first to ensure a good contact.
The solar cell is connected to the motor with two short lengths of wire (to prevent current loss)

The soldering technique:

Soft soldering is suitable for simple working with wire and thin sheet metal. All electronic items are assembled by soft soldering. The solder itself is available as sticks or in wire form and is made up from a mixture of laed and tin. Electronic solder contains a middle core of flux, which helps it to flow and is only suitable for use with electronic components. Simple solder has a higher lead content (50%) and is cheaper. Although with this you will need a separate flux paste or fluid. Any soldering iron with a rating of 30-50 watt is suitable for this project.

Soldering tips:

- Clean up the area to be soldered with steel wool.

- Apply flux to the sodering area.

- Make a temporary join where you are going to solder to keep the parts from slipping.

- Make sure the soldering iron is hot.

- Clean up the tip of the iron with a wire brush (or rub the tip on a salmiac stone)

- Tin the tip with a small amount of solder.

- Make sure that the tip has a good contact with the parts that are to be joined to ensure maximum heat trans fer.

- Melt the flux on the work and tin the area to be joined.

- The flux should flow on the joint not on the soldering iron tip.

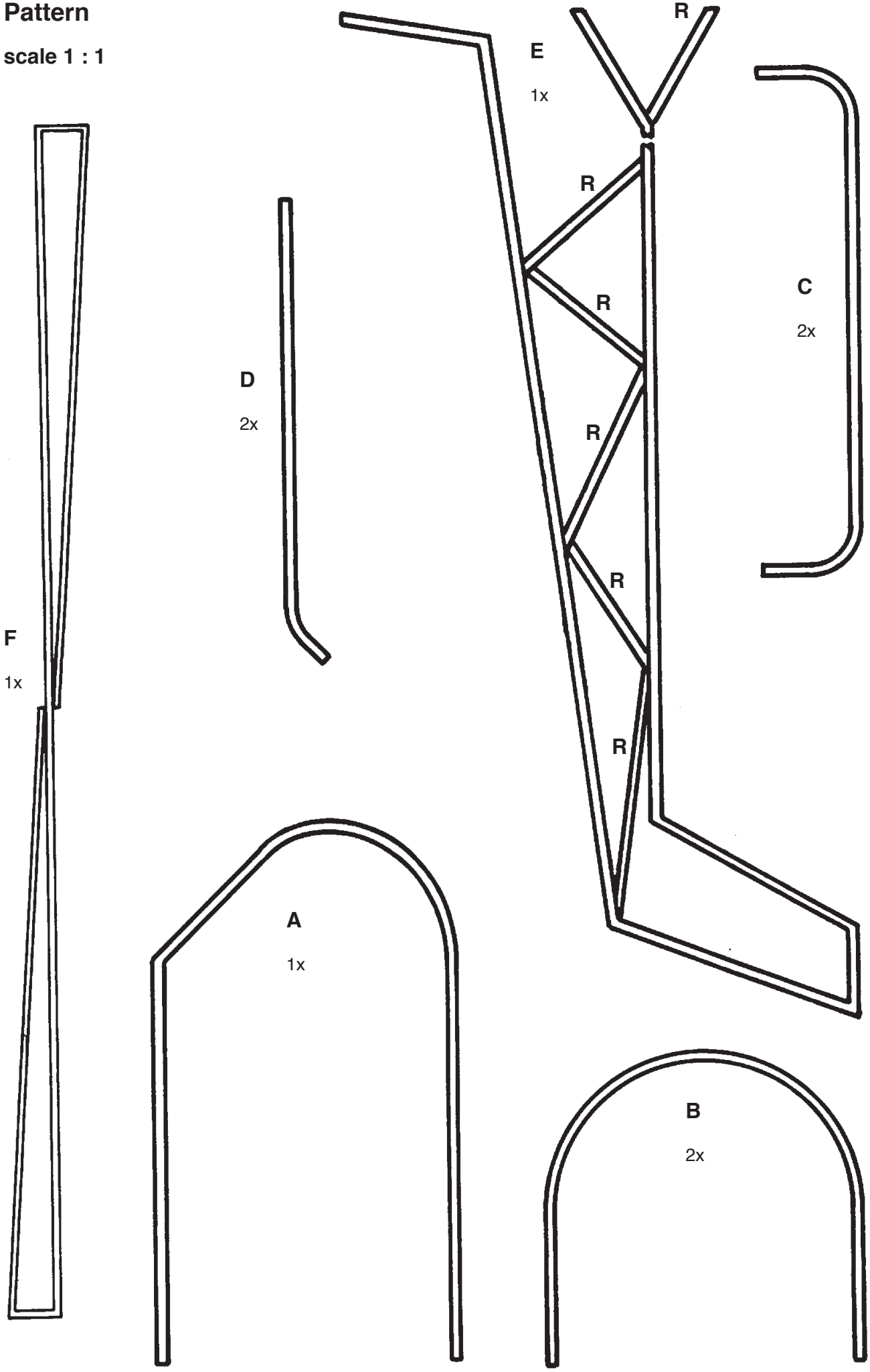
- Leave the soldered joint to cool slowly and do not move the parts until the solder has set.

If you use electronic solder you will not need a flux.
Finally the connections to the solar motor have to be made with an electonic solder

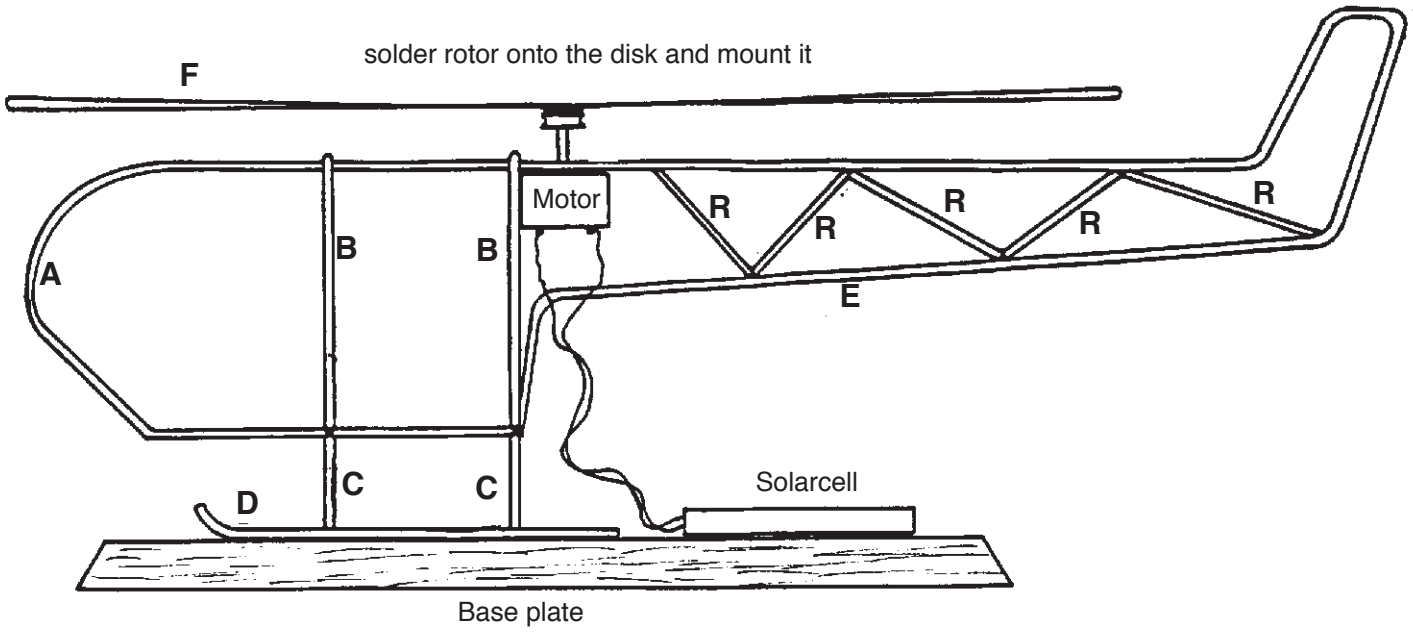
Please note that using a separate flux with electronic components can cause damage to the connections.

Pattern

scale 1 : 1



Side-view



Plan-view