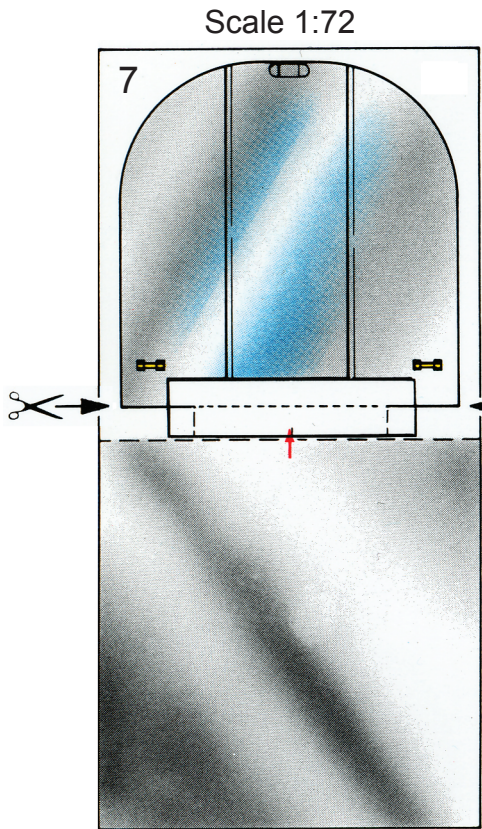




# HUBBLE SPACE TELESCOPE

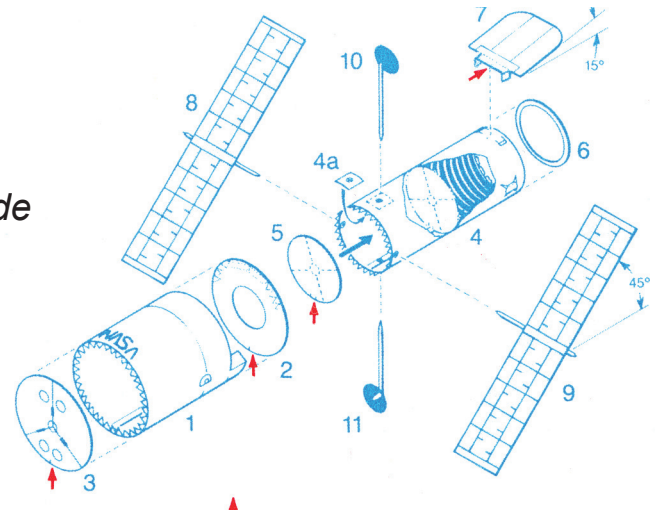


See *Assembly Instructions* on reverse side

## General Construction Notes

### Line Code

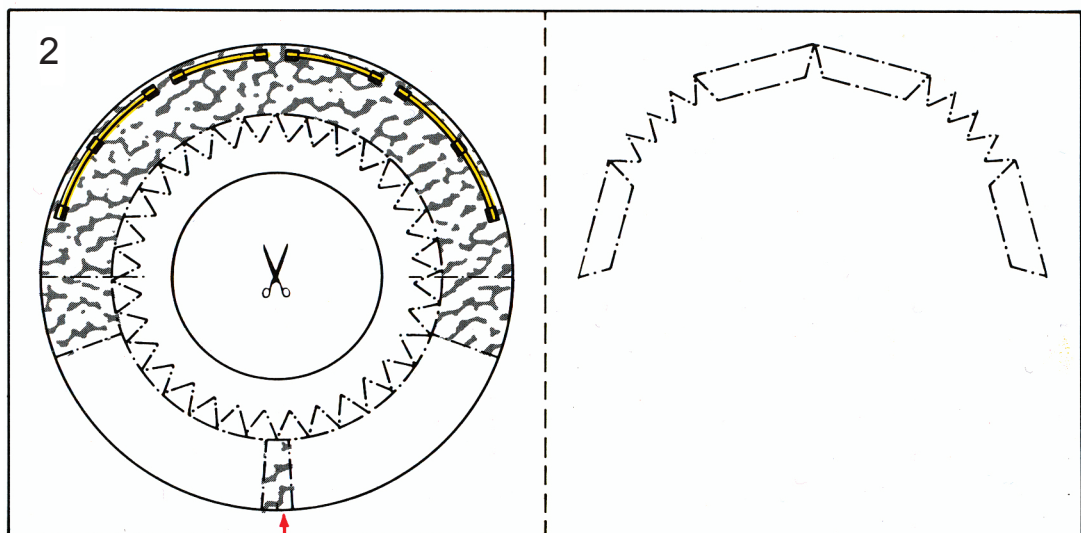
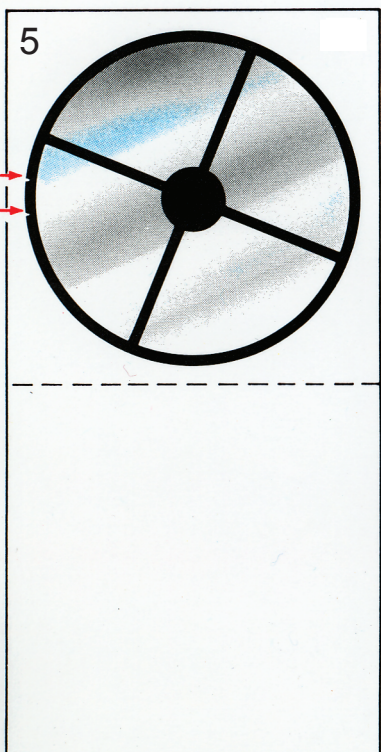
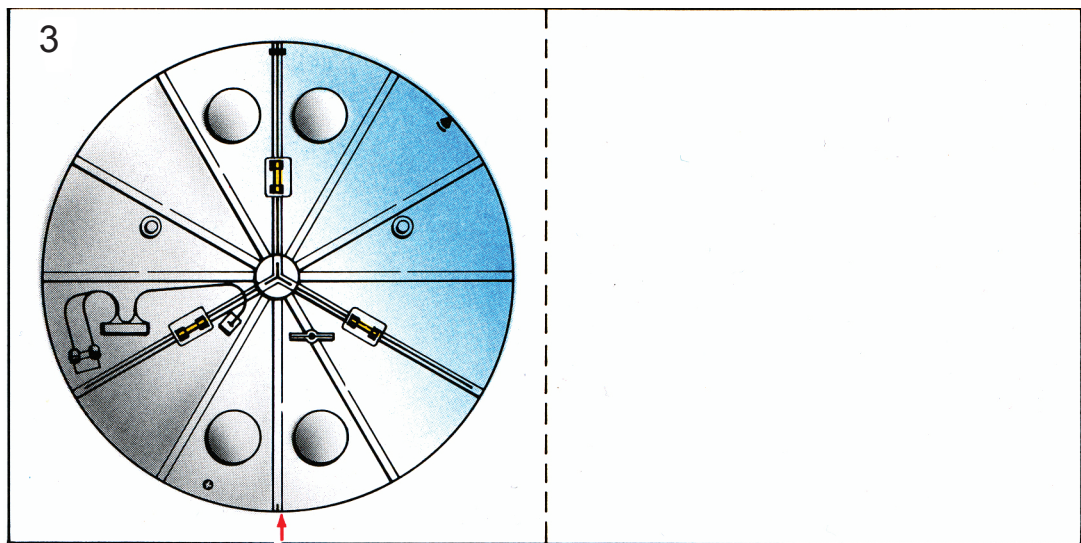
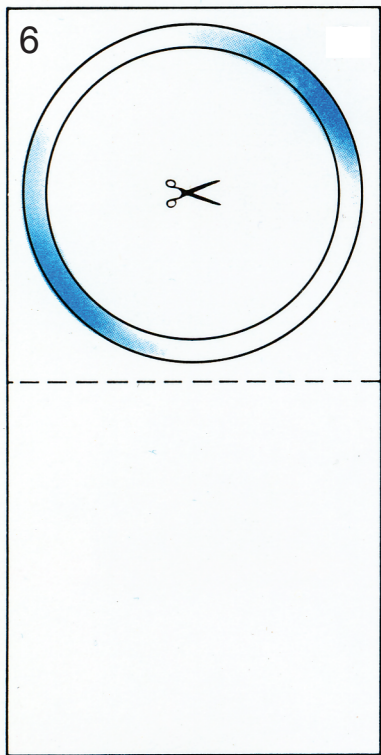
- Part outline (cut on center of line)
- ✂ Cut out or special cut
- - - - Score and fold **down** (away from you) to form "ridge"
- - - - Score and fold **up** (toward you) to form "valley"
- · - · - · Location of attaching part



Parts are numbered in sequence of assembly

### Procedure

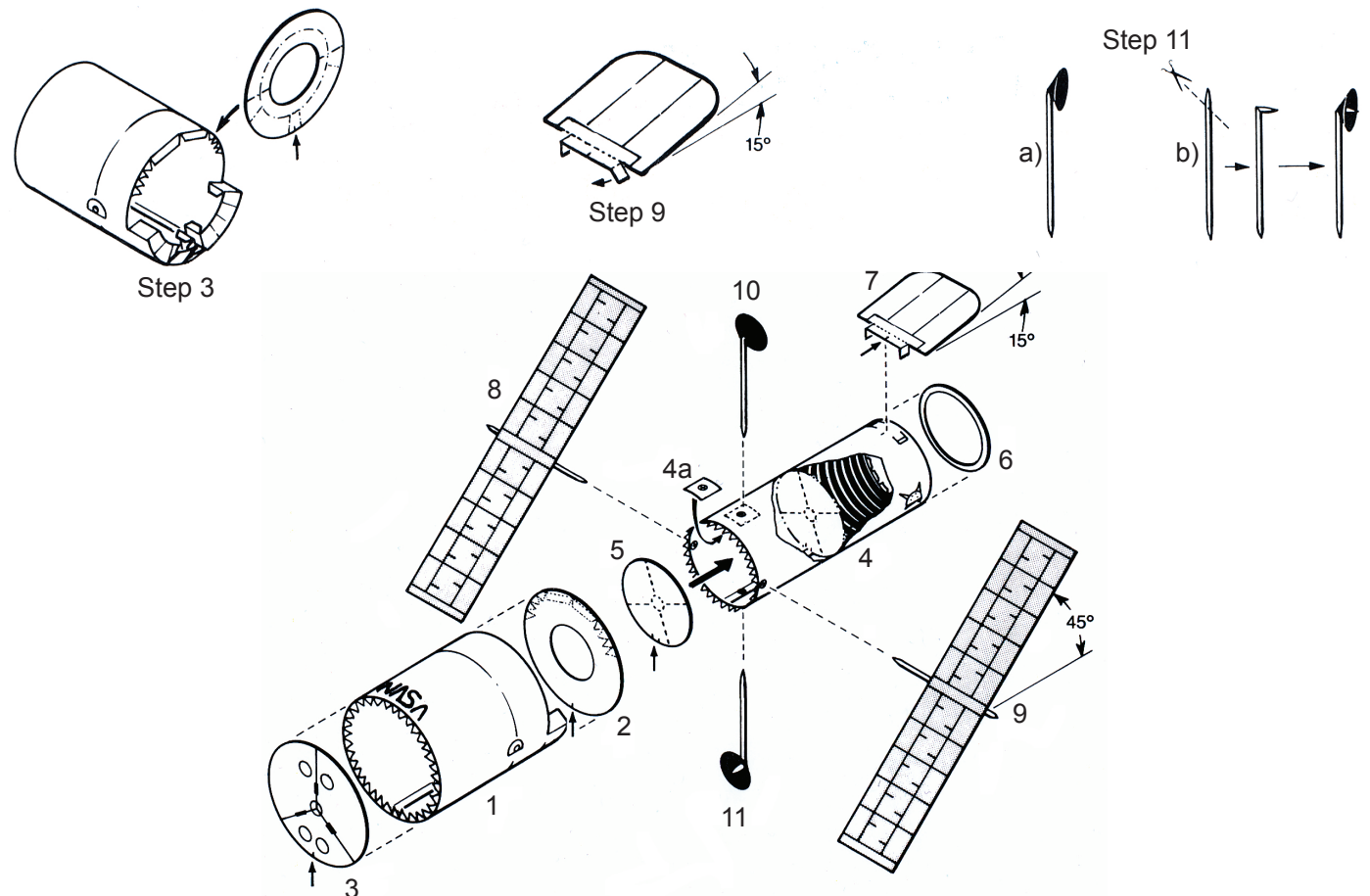
1. **Score** each part *before* cutting out.
2. **Cut Out** using X-Acto for straight cuts, scissors for curved cuts.
3. **Attach Glue Splices** along their centerline. Seams are generally butt-type joints.
4. **Curl or Fold** parts so that each assumes its final shape *before* gluing.
5. **Checkfit** *before* gluing.
6. **Assemble (Glue)**. While glue stick is generally satisfactory and greatly speeds up assembly time, a *thin* layer of white glue (Elmer's) works best, Super glue is not recommended. Press parts *firmly* together until glue sets. (Hint: Placing glued parts between layers of waxed paper and pressing beneath a book until dry will prevent warping.)



CAUTION: Use care with sharp tools. Adult supervision advised

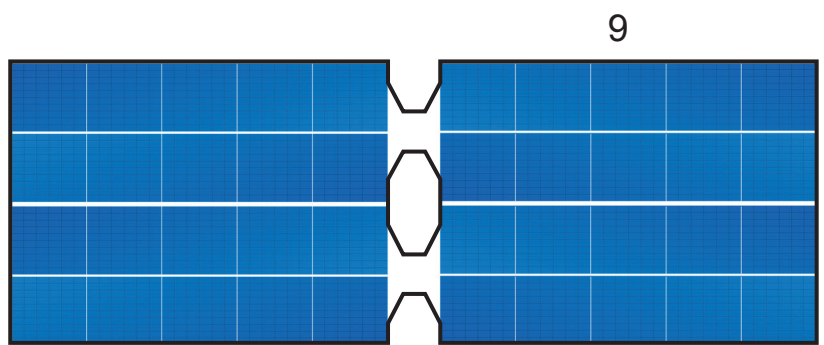
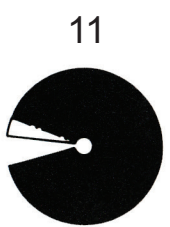
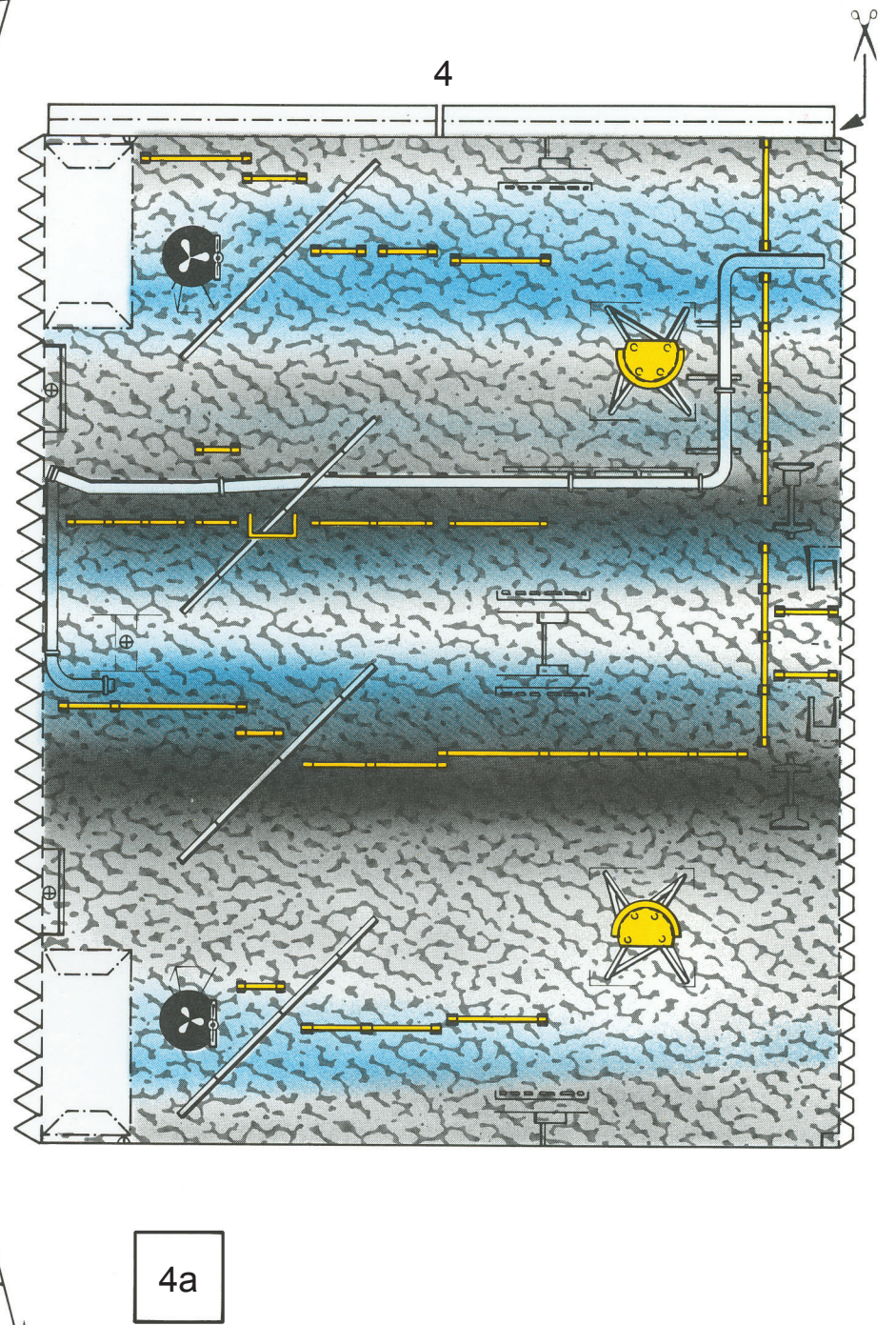
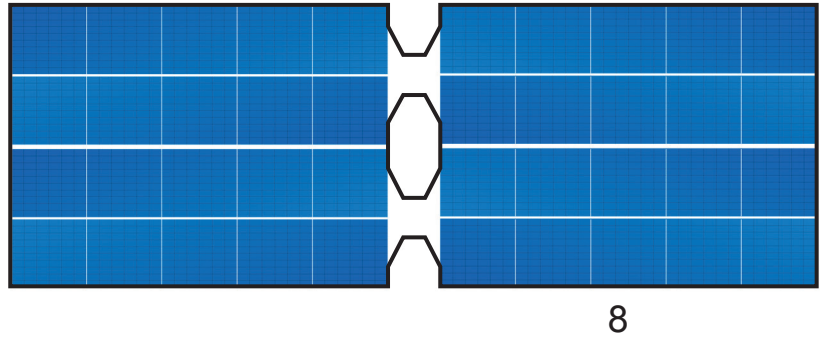
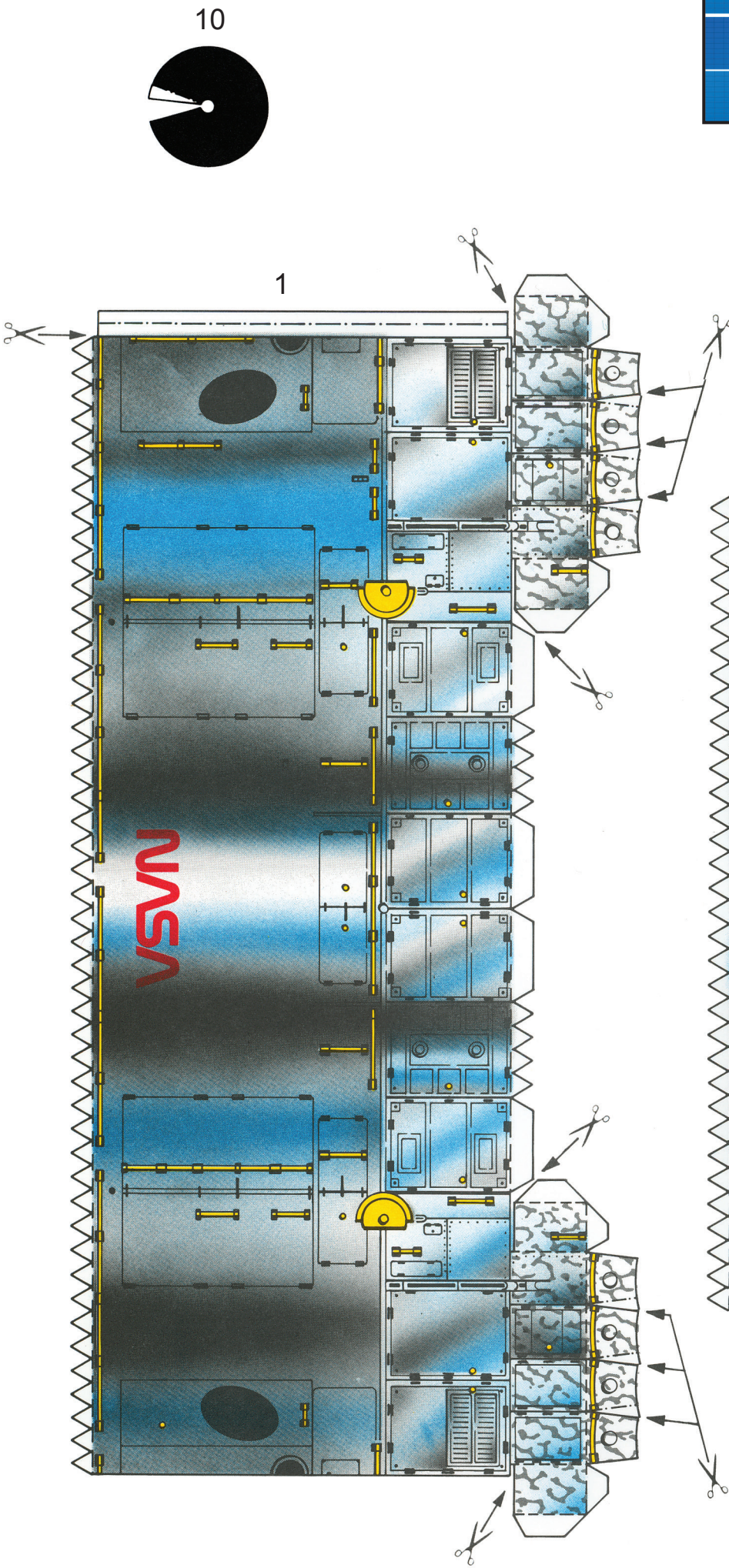
## Tools you will need:

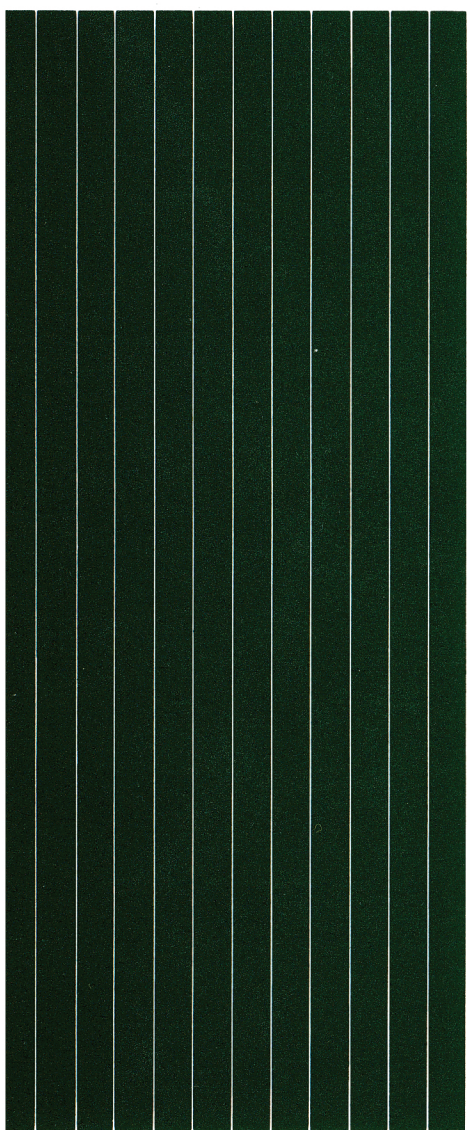
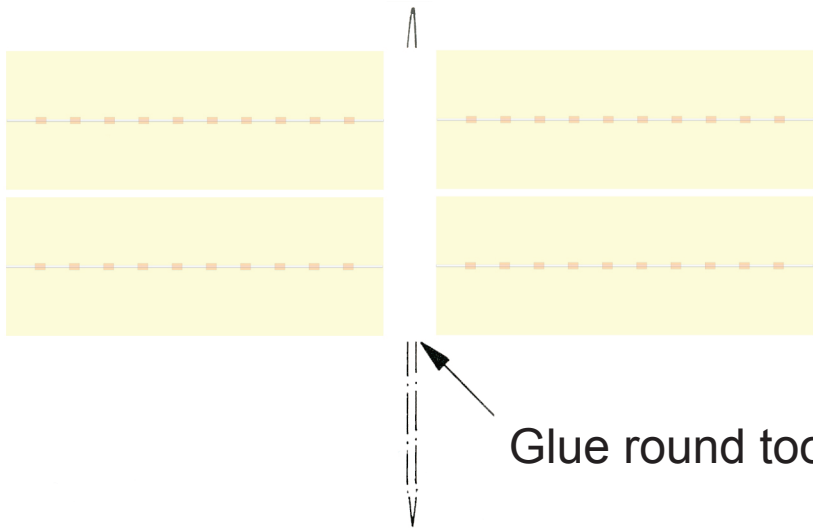
- Scissors (for cutting all curved lines); use manicure scissors for smaller cuts. (Hint: Pinking shears may be used to carefully cut triangular glue tabs on many parts, disregarding the 'teeth' as drawn. Make certain the lower point of each triangle falls exactly on the scored fold line.
- An X-Acto knife (use a new blade)
- Scribe or blunt-edged knife, small knitting needle or large smooth sewing needle (for scoring folds)
- Straight edge, preferably a metal ruler
- Dowel or round pencil (for forming curved parts)
- Rubber or foam pad (for forming curved parts)
- Cutting board (cardboard is okay)
- Tweezers (for holding and bending small parts)
- Round toothpicks (for glue applications). Reserve four (4) for use in building this model.



## Assembly Instructions

1. Cut out rectangles containing **Parts 2, 3, 5, 6, and 7**. Score, fold double-sided, and glue.
2. Score and cut out **Part 1**, noting the special cuts. Curl to shape into cylinder and glue. Fold glue tabs and form equipment bays, working from each side toward bottom seam at center. Fold over all remaining glue tabs. Since the teeth fold into the tube, make sure you score them and bend them back a bit before creating and gluing the tube. Make sure to cut off and retain the narrow white rectangular piece, which is marked with an attaching part line. When the tube is folded and glued together, it will straddle the internal butted seam
3. Cut out **Part 2**, removing center circle as indicated. Attach to front (equipment bay end) of **Part 1**. Align with seam. (Note alignment marks †)
4. Cut out **Part 3**. Apply glue to 5-6 tabs at a time, beginning at bottom seam of **Part 1**, and attach **Part 3**. Note alignment mark. Press firmly on each glued tab through hole in **Part 2**. Press assembly against a flat surface until dry.
5. Score and cut out **Part 4**. Curl to shape into cylinder and glue. Seam is at bottom. Cut out and attach small square port **Part 4a** where indicated. This reinforces the cylinder for the toothpick antenna mast. Make sure to cut off and retain the narrow white rectangular piece, which is marked with an attaching part line. When the tube is folded and glued together, it will straddle the internal butted seam
6. Cut out **Part 5**, carefully trimming just to the edge of the black. Check fit by inserting to indicated mark (approximately half way) inside **Part 4** cylinder, using cardboard bathroom tissue tube as 'plunger.' Correct fit is just snug with no distortion of **Part 4**. Note alignment marks and glue in place.
7. Cut out **Part 6**, carefully removing center circle as shown. Attach to front end of **Part 4**, gluing 5-6 tabs at a time. Press against flat surface until dry.
8. Attach **Part 4** to **Part 2** as indicated, noting all alignment marks. Dot (⊕) marking location of lower antenna mast (toothpick) must be visible between equipment bays at bottom.
9. Score and cut out **Part 7**. Bend tab up approximately 15° and bend 'ears' **down** to contact **Part 4** cylinder (see above). Attach to **Part 4**, noting alignment mark.
10. Cut out **Part 8** (left side). Glue round toothpick to the back side, as indicated, to serve as solar array support arm. (Note: You may wish to color toothpicks with a gray or black marker prior to assembly.) Similarly, cut out **Part 9** (right side) and attach toothpick. Allow to dry.
11. Cut out **Parts 10 and 11**, shaping them into shallow cones (see above). You may: a) glue each to tip of round toothpick or, for a more realistic appearance, b) cut off one end of each toothpick at a 45° angle ¼" from its tip. Rotate 180° and glue segments to form a right angle. Cut out small center holes in **Parts 10 and 11**; push onto toothpicks and glue.
12. Locate 4 dots at base of **Part 4** marked ⊕. Left and right side dots mark the position of toothpick support solar arrays, **Parts 8 and 9**. Top and bottom dots (through reinforcing piece **4a** and bottom glue splice) mark locations for toothpick antenna masts supporting **Parts 10 and 11**. Using sharp X-Acto blade, pin or other sharp object, punch hole in center of each dot and enlarge by inserting a toothpick.
13. Glue solar arrays, **Parts 8 and 9**, in place (**Part 8** goes on the left, **9** on the right with blue side up, toothpick underneath). Apply glue to end of toothpick and insert ¼": into hole, ⊕. Also, glue **side** of toothpick against **Part 2**. Incline array at approximately 45°. Check alignment.
14. Glue antennas **10 and 11** in place, with top antenna facing forward and bottom one facing aft. Insert toothpicks ¼" into **Part 4**. Check alignment.
15. Suspend completed model, using thread or monofilament wrapped around **Part 4** and routed in **front** of solar array toothpicks and **behind** antenna mast toothpicks.





← Insert part 5 to this line

4a

