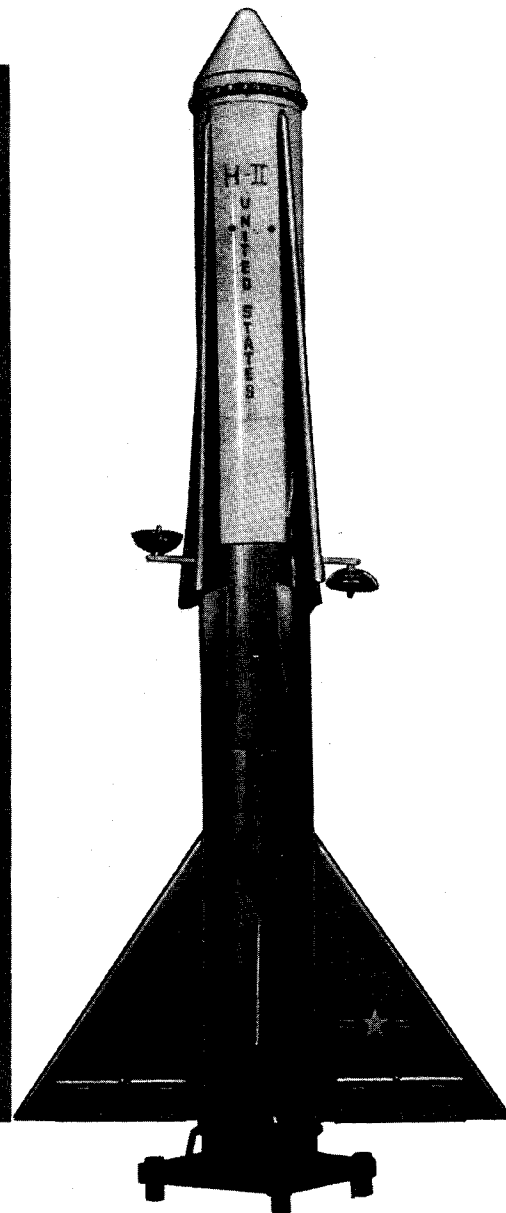
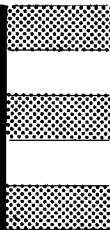


Revell
Authentic Kit



ASSEMBLY INSTRUCTIONS FOR YOUR **HELIOS**

HISTORY OF THE CONVAIR HELIOS SPACE VEHICLE

HELIOS is a space vehicle proposed by Kraft A. Ehricke of CONVAIR (Astronautics) Division, General Dynamics Corporation, for making direct flights from the earth's surface to the moon or nearby planets.

This vehicle derives its name from the first letters of the words describing its function, heteropowered earth-launched inter-orbital spacecraft. It is a chemical-nuclear powered ship consisting of two stages. The bottom stage is a chemically fuelled rocket-glider, carrying a pilot in an attached capsule, which can be jettisoned in case of emergency. The top stage carries a nuclear-powered rocket engine. Between the two stages is a corrugated adapter, which as well as holding the two stages together, houses the main crew quarters.

At takeoff, HELIOS would measure 200 feet in length, and weigh about 1,800,000 pounds. Wingspan of the bottom stage is 90 feet, and the diameter of the rocket body is 20 feet. Thrust deliviered at takeoff totals 2,700,000 pounds, and is developed by two engines of 1,350,000 pounds each.

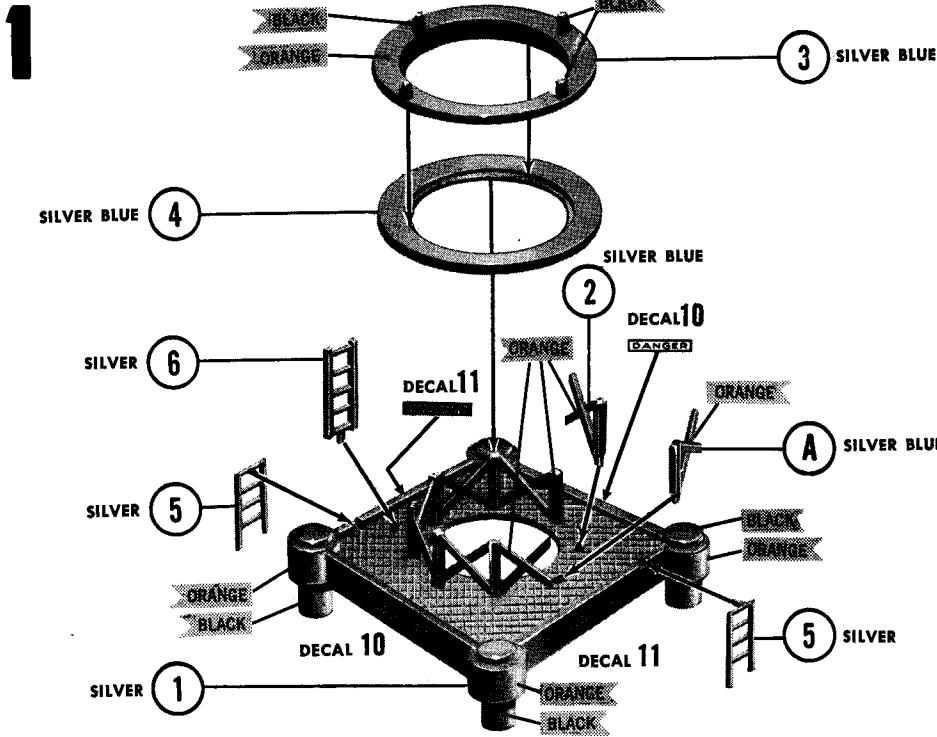
The bottom stage carries the vehicle to 170,000 feet at a speed of between 13 and 16,000 feet per second. At this point the glider stage breaks away, and glides safely back to earth. The top stage, carried on by the initial thrust, begins to separate from the adapter section before the nuclear engine is started. This separation is accomplished by small retro-rockets in the adapter section. At the end of the separation phase, the passenger gondola will be 1,000 feet behind the top stage, attached by cables which have unreeled from the main stage. At this point the nuclear engine is started, and the vehicle can proceed to its destination.

When the moon, or planet is reached, the vehicle is maneuvered into a vertical position, and using light thrust, gently lowers the gondola to the surface. Remote controls guide the main body some 1,000 feet away, where it in turn settles to the surface, keeping the crew safe from radiation.

HELIOS could deliver a 15,000 pound payload to the moon and still have enough fuel left to return to a satellite orbit around the earth, where it would be intercepted by a vehicle similar to CONVAIR'S Space Shuttlecraft, which is also part of REVELL'S space series.

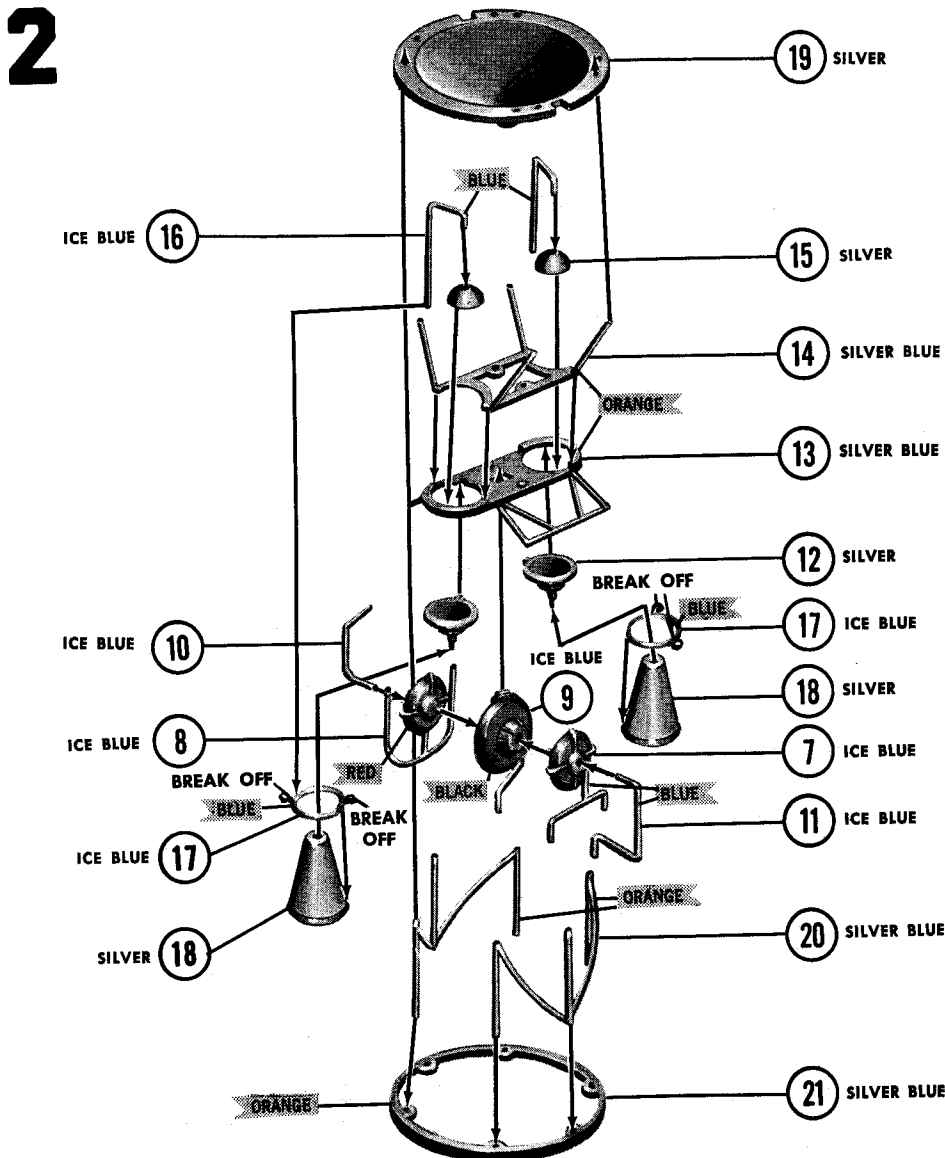
FOR BEST RESULTS READ THIS FIRST

1. All parts are numbered for easy identification, or the numbers are engraved on the bar next to the part. Break each part from its bar only when that part is to be used.
2. For the best fit, carefully trim any excess plastic from parts before assembling.
3. Since this kit is molded of Styrene Plastic, use only REVELL TYPE ⑤ CEMENT. Do not let cement touch your eyes or clothing.
4. Apply cement sparingly. Excess cement may run and damage the details on your model.
5. With REVELL PAINT SET COLORS, paint all parts where indicated and allow them to dry before assembling.
6. Directions for applying decals are on the back of the Decal Sheet.
7. The color in which each part is molded will be called out next to its number: (28) TAN
The color which the part should be painted is called out in a flag: **WHITE**
8. NOW CAREFULLY FOLLOW THESE NUMBERED STEPS FOR EASE IN BUILDING YOUR MODEL.



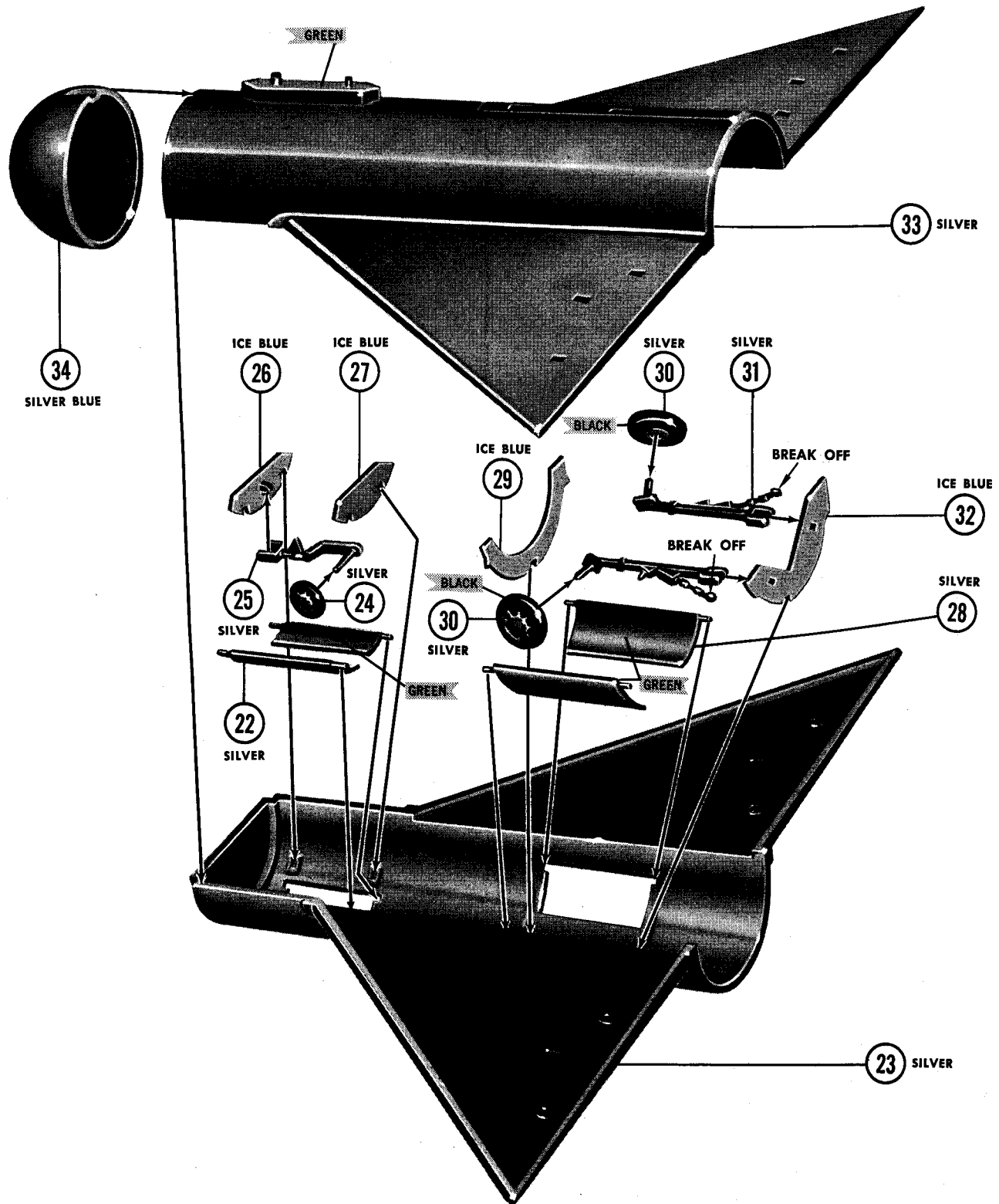
PAINT DETAILS AND APPLY DECALS, AS SHOWN, BEFORE ASSEMBLING.

- A. Cement the Positive Launching Ring Support, Part A, to the Launching Pad, Part 1, as shown. Cement the Launching Ring Supports, Parts 2, to the Pad.
- B. Cement the Upper Launching Ring, Part 3, and the Lower Launching Ring, Part 4, together. Now cement the Launching Rings to the Launching Ring Supports, as shown.
- C. Cement the Ground To Pad Ladders, Parts 5, to the Pad. Cement the Pad To Ring Ladder, Part 6, to the Pad and Ring, as shown. Set the Launching Pad aside to dry.



PAINT DETAILS, AS SHOWN, BEFORE ASSEMBLING.

- A. Cement the Fuel Pump, Part 7, and the Oxidizer Pump, Part 8, to the Turbine, Part 9, as shown.
- B. Cement the Oxidizer Pump to Rocket Pipe, Part 10, to the Oxidizer Pump, as shown. Cement the Fuel Tank to Pump Pipe, Part 11, to the Fuel Pump, as shown. Allow this assembly to dry.
- C. Cement the Rocket Engine Gimballs — Lower Halves, Parts 12, to the Rocket Engine Frame — Lower Half, Part 13, as shown. Cement the Rocket Engine Frame — Upper Half, Part 14, to the Lower Half, as shown. Now cement the Rocket Engine Gimballs — Upper Halves, Parts 15, to the Lower Gimball Halves, as shown.
- D. Cement the Ring To Rocket Engine Fuel Pipes, Parts 16, to the Gimballs, as shown. Cement the Fuel Rings, Parts 17, to the Rocket Exhaust Nozzles, Parts 18, as shown. Cement the Turbine to the Lower Frame, as shown. Cement the Nozzles to the Lower Half of the Gimballs, as shown.
- E. Cement the Engine Frame — Upper Half to the First Stage Aft Bulkhead, Part 19, as shown. Now cement the Engine Frame Supports, Parts 20, to the Aft Bulkhead, as shown. Finally, cement the Engine Frame Ring, Part 21, to the Frame Supports, as shown. Set the Engine assembly aside to dry.



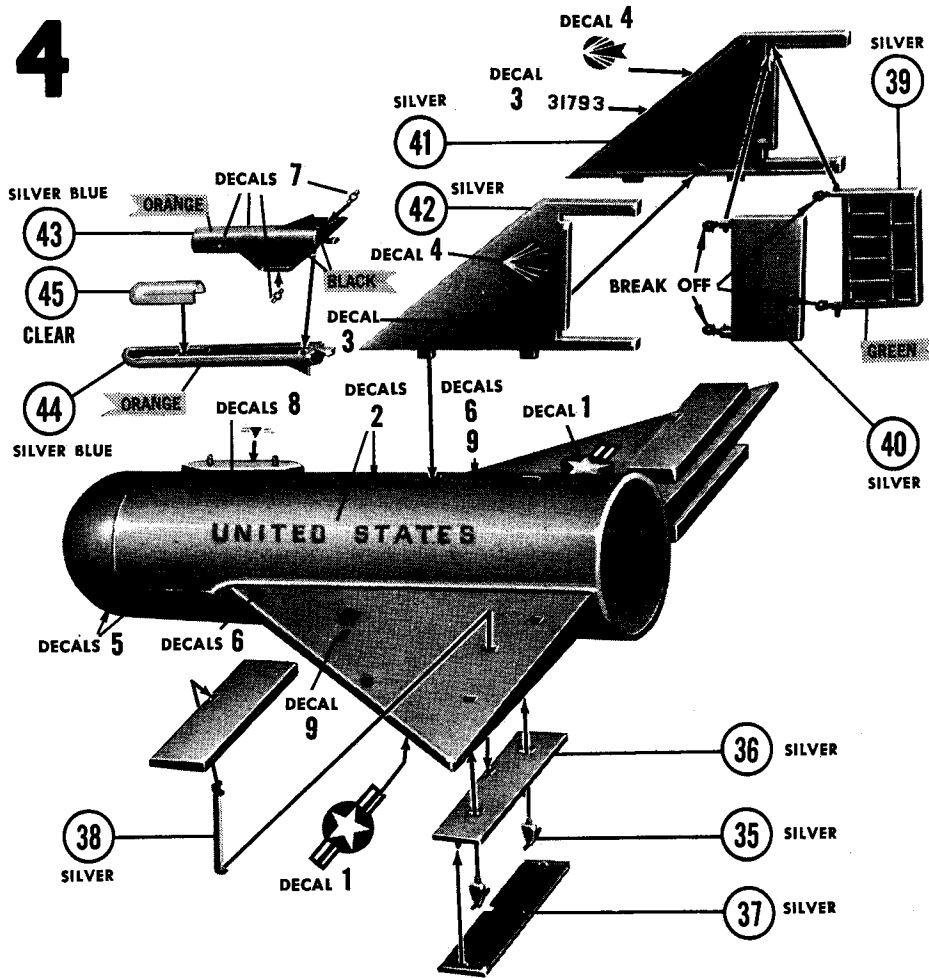
**PAINT DETAILS. AS SHOWN,
BEFORE ASSEMBLING.**

- A. Place, do not cement, the Nose Landing Gear Doors, Parts 22, in position in the First Stage Fuselage — Bottom Half, Part 23, as shown. Now snap, do not cement, the Nose Landing Gear Wheel, Part 24, onto the Nose Landing Gear, Part 25, as shown. Snap, do not cement, the Nose Gear onto the Nose Gear Pivot Plate, Part 26, as shown.
- B. Carefully cement the Pivot Plate and the Nose Gear Bridge, Part 27, to the Fuselage Bottom, as shown. Do not allow cement to touch the Nose Gear Doors, or they will not move.
- C. Place, do not cement, the Main Landing Gear Doors, Parts 28,

in the Fuselage Bottom, as shown. Carefully cement the Main Landing Gear Bridge, Part 29, to the Fuselage Bottom, as shown.

- D. Snap, do not cement, the Main Landing Gear Wheels, Parts 30, to the Main Landing Gear, Parts 31. Now snap the Main Landing Gear to the Main Landing Gear Pivot Plate, Part 32, as shown. Carefully cement the Pivot Plate to the Fuselage, as shown. Do not let cement touch the Doors, or they will not move.
- E. Cement the First Stage Fuselage — Top Half, Part 33, to the Fuselage Bottom. Now cement the First Stage Nose Cap, Part 34, to the Fuselage Front, as shown.

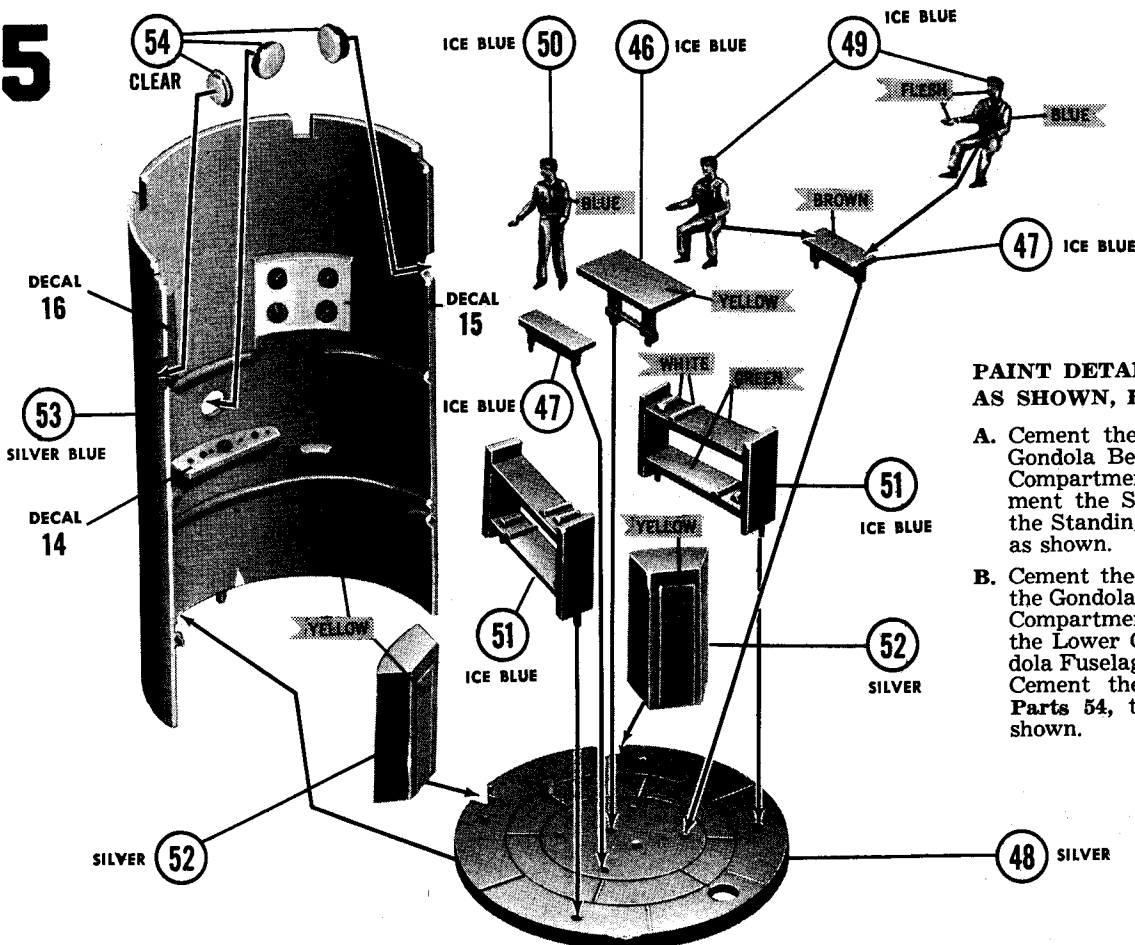
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PAINT DETAILS AND APPLY DECALS, AS SHOWN, BEFORE ASSEMBLING.

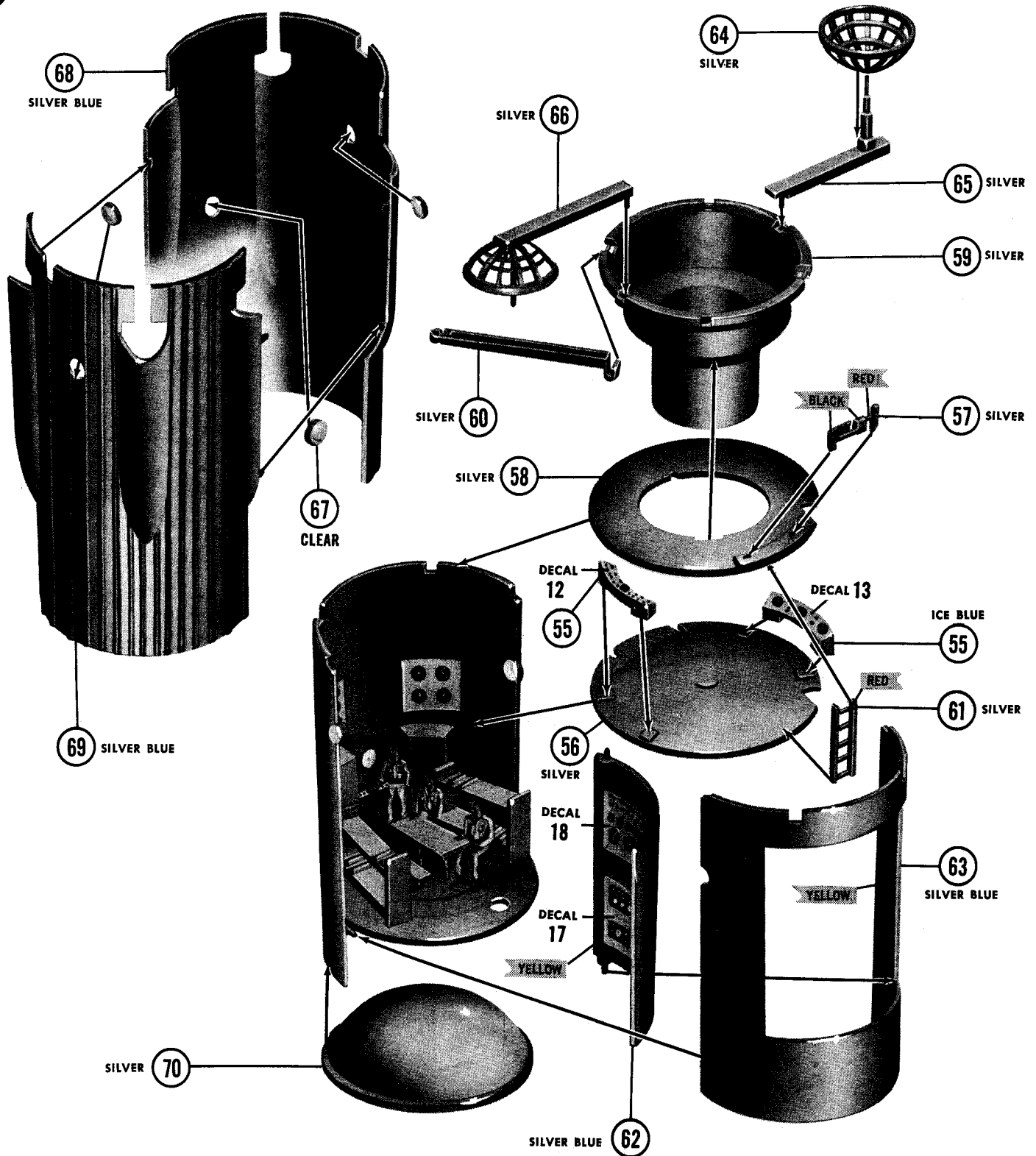
- A. Insert, do not cement, (two) Horizontal Control Surface Pivots, **Parts 35**, through the holes in a Horizontal Control Surface—Inner Half, **Part 36**. Now cement a Horizontal Control Surface—Outer Half, **Part 37**, to the Inner Half, as shown. Do not let cement touch the Pivots, or they will not move.
- B. Snap, do not cement, a Horizontal Control Surface Tie Rod, **Part 38**, to the Control Surface, as shown. Now insert the Tie Rod through the hole provided in the Wing and cement the Pivots to the Wing, as shown. Assemble another Control Surface Unit in the same way you assembled the first one and snap onto the Tie Rod, as shown. Cement the Pivots to the Wings, as you did before. Assemble the remaining Control Surface units in the same way.
- C. Place, do not cement, the Right and Left Vertical Control Surfaces, **Parts 39 and 40**, in position in the Vertical Stabilizer—Right Half, **Part 41**, as shown. Now carefully cement the Vertical Stabilizer—Left Half, **Part 42**, to the Right Half. Do not let cement touch the Control Surfaces, or they will not move. Now cement the Vertical Stabilizer to the Fuselage Top Half, as shown.
- D. Cement the Escape Capsule—Top Half, **Part 43**, and the Escape Capsule—Bottom Half, **Part 44**, together. Now cement the Escape Capsule Canopy, **Part 45**, to the Escape Capsule. Finally, cement the Escape Capsule to the First Stage Fuselage Top, as shown. Set the First Stage assembly aside to dry.

5



PAINT DETAILS AND APPLY DECALS, AS SHOWN, BEFORE ASSEMBLING.

- A. Cement the Gondola Table, **Part 46**, and Gondola Benches, **Parts 47**, to the Lower Compartment Deck, **Part 48**, as shown. Cement the Seated Crewmen, **Parts 49**, and the Standing Crewman, **Part 50**, into place, as shown.
- B. Cement the Gondola Bunks, **Parts 51**, and the Gondola Lockers, **Parts 52**, to the Lower Compartment Deck, as shown. Now cement the Lower Compartment Deck to the Gondola Fuselage—Left Half, **Part 53**, as shown. Cement the Gondola Porthole Windows, **Parts 54**, to the Fuselage Left Half, as shown.



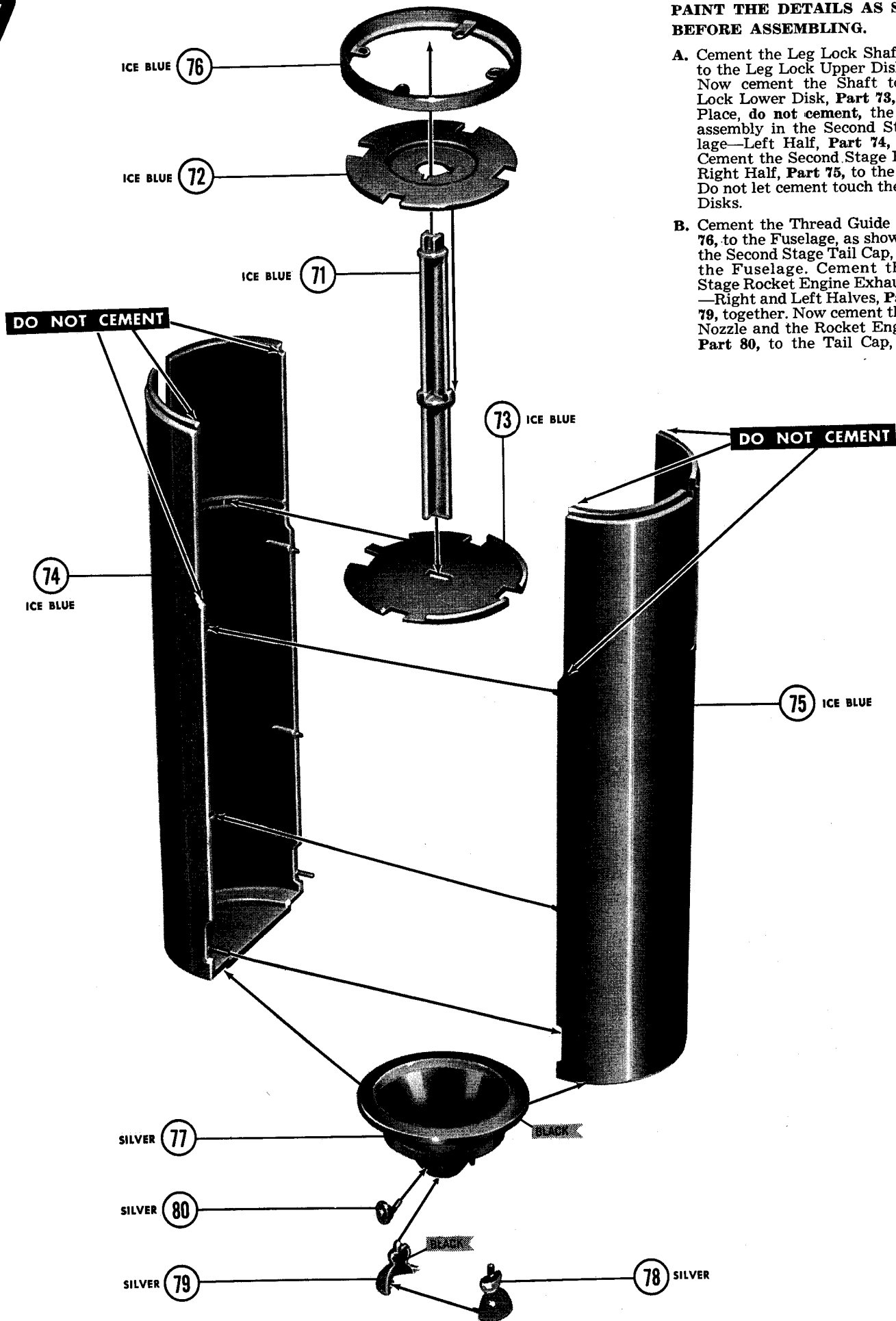
PAINT DETAILS AND APPLY DECALS, AS SHOWN, BEFORE ASSEMBLING.

- Cement the Control Consoles, **Parts 55**, to the Upper Compartment Deck, **Part 56**, as shown.
- Cement the Gondola Piping, **Part 57**, to the Upper Compartment Ceiling, **Part 58**. Now cement the Upper Compartment Deck and Ceiling to the Gondola Top, **Part 59**, as shown. Gently snap, do not cement, the Gondola Arms, **Parts 60**, to the Gondola Top, as shown. Carefully cement the Gondola Top and Decks to the Fuselage Left Half, as shown. Do not let cement touch the Arms, or they will not move.
- Cement the Upper Compartment Ladder, **Part 61**, into position, as shown.

tion, as shown. Place, do not cement, the Gondola Door, **Part 62**, into position in the Gondola Fuselage — Right Half, **Part 63**, as shown. Now cement the Right Fuselage Half into position, as shown. Do not let cement touch the Gondola Arms.

- Cement the Radar Screens, **Parts 64**, to the Right and Left Radar Arms, **Parts 65 and 66**. Now cement the Radar Arms to the Gondola Top, as shown.
- Cement the Gondola Housing Porthole Windows, **Parts 67**, to the Left and Right Gondola Housing Halves, **Parts 68 and 69**. Now cement the Gondola Housing Halves together. Finally, cement the Gondola Bottom Section, **Part 70**, to the Gondola, as shown. Set the Gondola and Housing aside to dry.

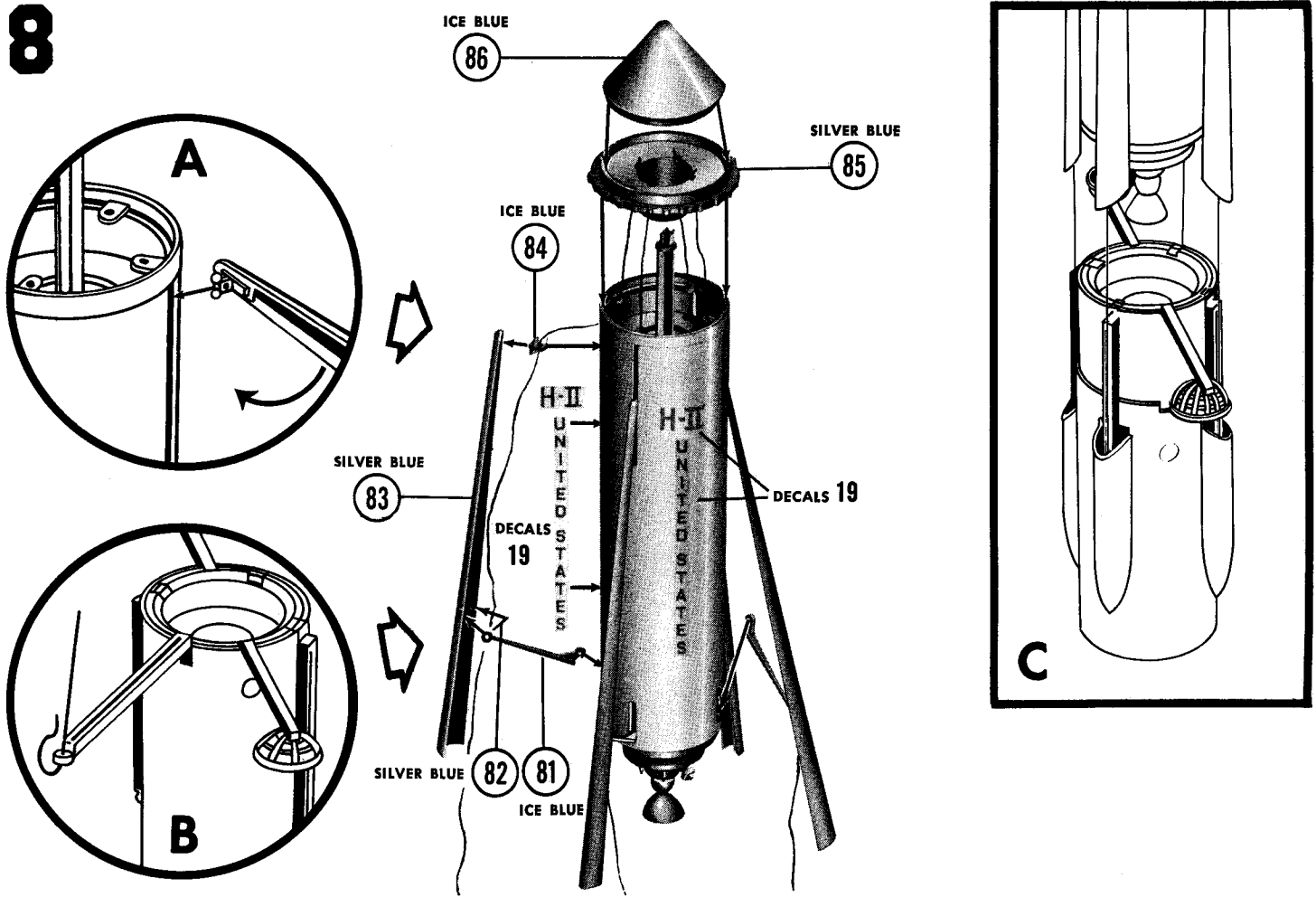
7



**PAINT THE DETAILS AS SHOWN,
BEFORE ASSEMBLING.**

A. Cement the Leg Lock Shaft, **Part 71**, to the Leg Lock Upper Disk, **Part 72**. Now cement the Shaft to the Leg Lock Lower Disk, **Part 73**, as shown. Place, **do not cement**, the Leg Lock assembly in the Second Stage Fuselage—Left Half, **Part 74**, as shown. Cement the Second Stage Fuselage—Right Half, **Part 75**, to the Left Half. Do not let cement touch the Leg Lock Disks.

B. Cement the Thread Guide Ring, **Part 76**, to the Fuselage, as shown. Cement the Second Stage Tail Cap, **Part 77**, to the Fuselage. Cement the Second Stage Rocket Engine Exhaust Nozzles—Right and Left Halves, **Parts 78 and 79**, together. Now cement the Exhaust Nozzle and the Rocket Engine Valve, **Part 80**, to the Tail Cap, as shown.



APPLY DECALS, AS SHOWN, BEFORE ASSEMBLING.

- A. Slide a Leg Brace, Part 81, onto a Leg Brace Pivot Pin, Part 82. Now carefully cement the Pivot Pin to one of the Legs, Part 83, as shown. Do not let cement touch the Brace. Cement a Leg Guide, Part 84, to the Leg, as shown. Now assemble the remaining Legs in the same way, and set aside to dry.
- B. Cut (four) 18-inch lengths of thread from the spool provided. Pass the threads through the holes in the Thread Ring and Spool, Part 85, as shown. Tie a knot in each thread and cement to the Thread Ring, as shown. Now pass the other ends of the threads through the holes in the Thread Guide Ring, then through the slots in the Fuselage, through the holes in the Leg Guides, and then behind the Leg Brace Pivot Pins.
- C. By turning the Legs, as shown in Small Drawing "A", insert

the Leg Guides into the slots on the Fuselage. Snap, do not cement, the Leg Braces to the pins in the lower Fuselage slots. Now knot and cement the threads to the Gondola Arms, as shown in Small Drawing "B". Be sure the threads are all the same length so the Gondola will hang straight. Place, do not cement, the Thread Ring and Spool on the Thread Guide Ring. Finally, cement the Second Stage Nose Cone, Part 86, to the Leg Lock Shaft, as shown. Do not let cement touch the Thread Guide Ring.

D. The Gondola may now be lowered or raised by turning the Thread Ring and Spool. **CAUTION:** Do not raise the Gondola too high with the Gondola Arms in extended position. Fold the Arms down against the Gondola Sides and slide the Gondola Housing into position on the Gondola, as shown in Small Drawing "C". Now the Gondola may be raised all the way up to the Second Stage.

CUT HERE

PARTS LIST FOR YOUR CONVAIR HELIOS SPACE VEHICLE

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> A. Positive Launching Ring Support 1. Launching Pad 2. Launching Ring Supports (7) 3. Upper Launching Ring 4. Lower Launching Ring 5. Ground To Pad Ladders (2) 6. Pad To Ring Ladder 7. Fuel Pump 8. Oxidizer Pump 9. Turbine 10. Oxidizer Pump To Rocket Pipe 11. Fuel Tank To Pump Pipe 12. Rocket Engine Gimbals—Lower Halves, (2) 13. Rocket Engine Frame—Lower Half 14. Rocket Engine Frame—Upper Half 15. Rocket Engine Gimball—Upper Halves (2) 16. Ring To Rocket Engine Fuel Pipes (2) 17. Fuel Ring (2) 18. Rocket Exhaust Nozzles (2) 19. First Stage Aft Bulkhead 20. Engine Frame Supports (2) 21. Engine Frame Ring 22. Nose Landing Gear Doors (2) 23. First Stage Fuselage—Bottom Half 24. Nose Landing Gear Wheel 25. Nose Landing Gear 26. Nose Gear Pivot Plate 27. Nose Gear Bridge 28. Main Landing Gear Doors (2) 29. Main Landing Gear Bridge 30. Main Landing Gear Wheels (2) 31. Main Landing Gear (2) | <ul style="list-style-type: none"> 32. Main Landing Gear Pivot Plate 33. First Stage Fuselage—Top Half 34. First Stage Nose Cap 35. Horizontal Control Surface Pivots (4) 36. Horizontal Control Surface—Inner Half (4) 37. Horizontal Control Surface—Outer Half (4) 38. Horizontal Control Surface Tie Rods (2) 39. Right Vertical Control Surface 40. Left Vertical Control Surface 41. Vertical Stabilizer—Right Half 42. Vertical Stabilizer—Left Half 43. Escape Capsule—Top Half 44. Escape Capsule—Bottom Half 45. Escape Capsule Canopy 46. Gondola Table 47. Gondola Benches (2) 48. Lower Compartment Deck 49. Seated Crewmen (2) 50. Standing Crewmen (2) 51. Gondola Bunks (2) 52. Gondola Lockers (2) 53. Gondola Fuselage—Left Half 54. Gondola Porthole Windows (3) 55. Control Consoles (2) 56. Upper Compartment Deck 57. Gondola Piping 58. Upper Compartment Ceiling 59. Gondola Top 60. Gondola Arms 61. Upper Compartment Ladder | <ul style="list-style-type: none"> 62. Gondola Door 63. Gondola Fuselage—Right Half 64. Radar Screens (2) 65. Right Radar Arm 66. Left Radar Arm 67. Gondola Housing Porthole Windows (3) 68. Gondola Housing—Left Half 69. Gondola Housing—Right Half 70. Gondola Bottom Section 71. Leg Lock Shaft 72. Leg Lock Upper Disk 73. Leg Lock Lower Disk 74. Second Stage Fuselage—Left Half 75. Second Stage Fuselage—Right Half 76. Thread Guide Ring 77. Second Stage Tail Cap 78. Second Stage Rocket Engine Exhaust Nozzle—Right Half 79. Second Stage Rocket Engine Exhaust Nozzle—Left Half 80. Rocket Engine Valve 81. Leg Braces (4) 82. Leg Brace Pivot Pin (4) 83. Legs (4) 84. Leg Guides (4) 85. Thread Ring And Spool 86. Second Stage Nose Cone 87. Walker With Box (2) 88. Walking Worker 89. Shadow Bases (2) 90. Decals 91. Thread |
|---|--|--|

SHOULD ANY PARTS BE MISSING, CIRCLE MISSING PARTS AND SEND IN PARTS LIST AND COUPON TO: DEPT. X, REVELL, INC., 4223 GLENCOE AVE. VENICE, CALIFORNIA

PLEASE FILL IN COUPON BELOW IN INK

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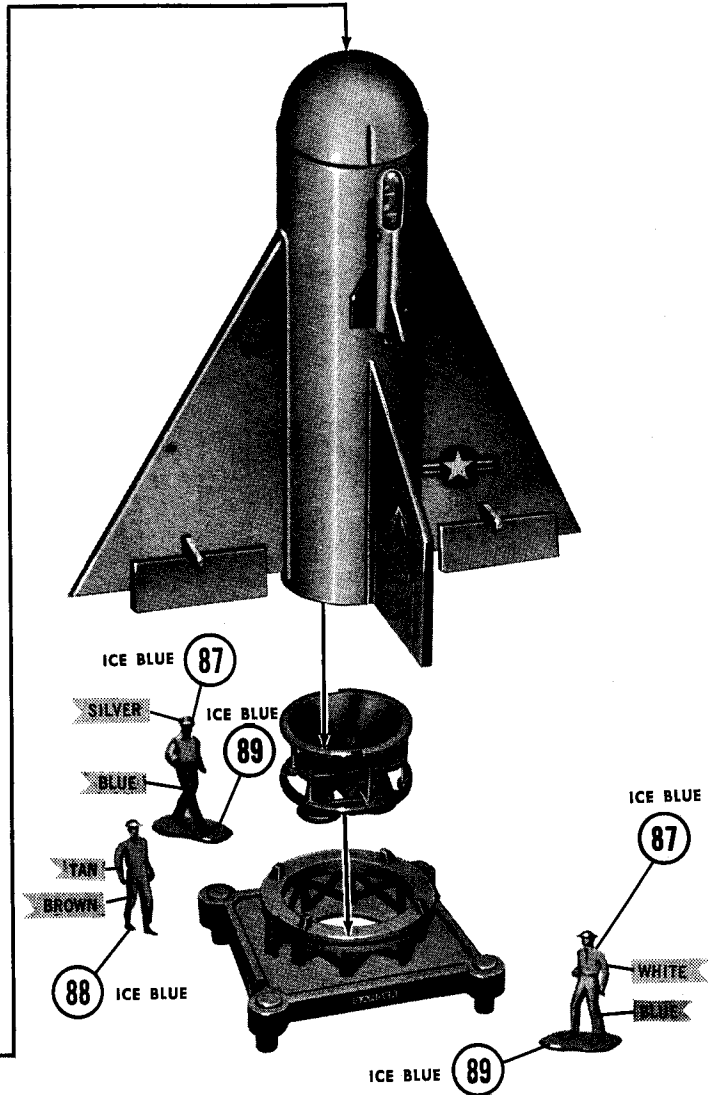
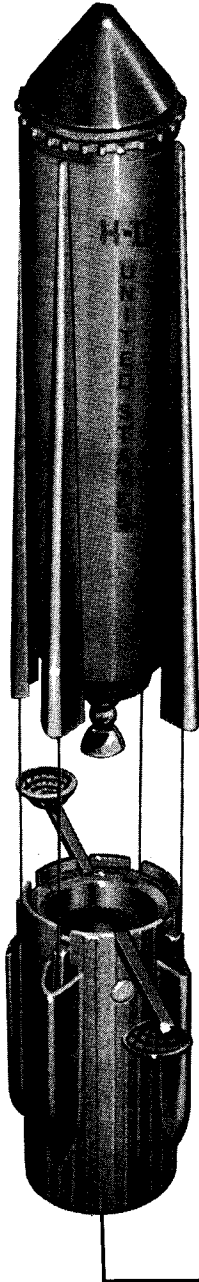
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**PAINT THE DETAILS,
AS SHOWN, BEFORE ASSEMBLING.**

- A.** Insert the First Stage Rocket Engine assembly into the First Stage Rear, as shown. The Rocket Engines may be locked into place by turning, as shown. Place the First Stage on the Launching Ring, as shown. The Gondola and First Stage may now be placed on the First Stage, as shown.
- B.** Cement the Workers With Boxes, **Parts 87**, or the Walking Worker, **Part 88**, to the Shadow Bases, **Parts 89**. The Figures may be displayed as shown, or in any position you desire.

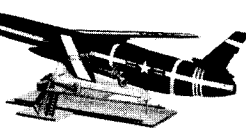


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