ASSEMBLY TIP
Read all instructions before beginning work on your model. Make sure you have all parts and supplies.

TEST FIT ALL PARTS TOGETHER BEFORE APPLYING ANY GLUE! If any parts don’t fit properly, sand as required for precision assembly.

PARTS
Locate the parts shown below and lay them out on the table. DO NOT USE THE DRAWINGS TO ASSEMBLE YOUR ROCKET.

HELPFUL HINT: IF NOSE CONE/COUPLER FIT IS...

TOO TIGHT: ADD MASKING TAPE. SAND FOR FIT.

TOO LOOSE: TEST FIT ALL PARTS TOGETHER BEFORE APPLYING ANY GLUE!

SUPPLIES
In addition to the parts included in the kit you will also need:

SCISSORS  PENCIL  RULER  FINE SAND PAPER (#400-600 GRIT)  MASKING TAPE  CARPENTER’S GLUE  PLASTIC CEMENT  MODELING KNIFE  PAINT PEN (SILVER)  SPRAY PRIMER (WHITE)  SPRAY PAINT: (OLIVE DRAB, LIGHT GRAY)  SPRAY DULL COAT (OPTIONAL)
1. ASSEMBLING ENGINE MOUNT

A. Mark yellow spacer tool.

B. Use scrap balsa to smear glue 2" (51 mm) inside engine mount tube.

C. Push engine block into BT-20 engine mount tube with spacer tool up to the mark. Remove spacer tool.

D. Mark engine mount tube at 1" (25 mm) and 2 1/4" (57 mm) from rear end. Cut 1/8" (3 mm) slit at the 2 1/4" mark.

E. Position engine hook.

F. Temporarily tape engine hook into place.

G. Carefully remove rings from card.

H. Apply glue above the 1" (25 mm) line.

I. Slide the mylar retainer ring onto engine mount tube up to 1" (25 mm) mark. Let dry.

J. Place a pencil mark at 3 1/8" (79 mm) and 4 7/8" (124 mm) from rear of engine mount.

K. Slide centering rings up to the marks.

L. Apply glue fillets to both sides of each centering ring. Let dry.

2. INSERTING ENGINE MOUNT

A. Make a mark inside the body tube 3/4" (19 mm) from end.

B. Use finger to smear glue ring around inside of tube at pencil mark. Don't cover pencil mark with glue.
INSERTING ENGINE MOUNT (Continued)

C. Push engine mount into the body tube until you can see the pencil mark.

D. Use scrap balsa to apply glue fillets to the centering ring/body tube joints.

3. ASSEMBLING TAIL CONE

A. Apply plastic cement to one half of tail cone. Press halves together.

B. Apply plastic cement inside the body tube.

LINE UP NOTCH WITH ENGINE HOOK.

C. Line up tail cone as shown and press into body tube.

TAIL CONE ASSEMBLY
Set aside to dry completely.

4. FIN PREPARATION

A. Fine sand both balsa sheets.

B. Carefully cut fins free with knife.

C. Stack fins together and sand all edges smooth. Do not round the edges.

5. MARK LAUNCH LUG LINE

A. Place a pencil mark on the body tube about half way between fin slots.

B. Extend line entire length of tube.

C. Mark line "LL".
6. ATTACHING FINS

A. Test fit fins in slots on tail cone. Sand as needed for a proper fit.

B. Apply plastic cement to root edge of fin and tab. Insert into slot.

C. Repeat for remaining fins.

D. Check alignment of fins as shown. Allow glue to set.

FINS SHOULD PROJECT STRAIGHT OUT.

NOTE: Fins must be attached correctly for stable flight.

E. Stand rocket on flat tabletop until glue dries completely.

7. ATTACHING LAUNCH LUGS

A. Using plastic cement, apply fillets to both sides of fin, smooth with finger. Let dry. Proceed to remaining fins.

B. Glue launch lugs on the line where shown. Center on line. When dry, add glue fillets to both sides.

C. Erase remaining pencil line.

8. ASSEMBLING NOSE CONE AND CLAY WEIGHTS

A. Clay weights must be added to nose cone for stability. The weights must be added prior to assembling nose cone halves together.

B. Press one clay weight firmly and evenly into each half of nose cone as indicated. NOTE: Clay weights must be installed prior to gluing halves together.

C. Apply plastic cement to one half of nose cone. Press halves together. Let dry.

COMPLETED NOSE CONE

HALF A

HALF B

CLAY WEIGHTS

9. PREPARE CLUSTER BOMBS

A. Remove excess flash and clean eyelets.

CAUTION: Do not cut off eyelet.

B. Spray paint cluster bombs light gray. Let dry.

C. Snap cluster bombs in half.

D. Tie a streamer to each cluster bomb.

DOUBLE KNOT.

E. Fold streamer in half. Roll the remainder.
10. ATTACHING SHOCK CORD

A. Cut out shock cord mount from front page.

B. Smear glue. Fold forward. (Shock cord slightly angled as shown.)

C. Smear glue. Fold forward.

D. Squeeze tightly. Hold for 1 minute.

E. Glue shock cord mount 1" (25 mm) inside front of body tube. Let dry completely.

11. ATTACHING PARACHUTE & SHOCK CORD

A. Scrape excess flash from the nose cone and clean eyelet.

CAUTION: Do not cut off eyelet.

B. Peel decals one at a time from backing and apply where shown. Rub down to remove bubbles.

C. Optional: Spray a dull coat over the entire rocket when completed.

PAINT SCHEME

A. First spray the rocket with primer, let dry and sand. Repeat until the rocket is smooth. Follow the paint scheme on the package.

B. Peel decals one at a time from backing and apply where shown. Rub down to remove bubbles.

PREPARE FOR FLIGHT

A. Insert 6-8 squares of loosely crumpled recovery wadding into body tube.

NOTE: Use Estes® Recovery Wadding (EST 302274) only.

B. Move the shock cord out of the way and slide streamers then cluster bombs into body tube. (Streamers should slide in easily. If fit is too tight, repack.)

C. Spike.

D. Fold.

E. Roll.

F. Wrap lines loosely. Insert parachute, shock cord, and nose cone.

PREPARE ENGINE

WARNING: FLAMMABLE

To avoid serious injury, read instructions & NAR Safety Code included with engines.

PREPARE YOUR ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH!

If you do not use your prepared engine, remove the igniter before storing your engine.

A. Tip must touch propellant.

B. Insert engine.
COUNTDOWN AND LAUNCH

KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!

1...

MASKING TAPE

(10 cm)

HOLD KEY DOWN AND PRESS LAUNCH BUTTON UNTIL LIFTOFF!

LAUNCH BUTTON

2...

3...

4...

Insert key. Push down and hold.

5...

4... 3... 2... 1...

LAUNCH SUPPLIES
(Sold Separately)

• Porta-Pad® II Launch Pad
• Electron Beam® Launch Controller
• Recovery Wadding
• Igniters (with Engines)
• Igniter Plugs (with Engines)
• Recommended Estes® Engines: B4-2, B4-4, B6-2, B6-4, C6-3, C6-5

PN 60564 (3-03)

FLYING YOUR ROCKET

Choose a large field (500 ft. [152 m] square) free of dry weeds and brown grass. The larger the launch area, the better the chance of recovering your rocket. Football fields and playgrounds are great. Launch only with little or no wind and good visibility.

Always follow the NAR Safety Code.

MISFIRES
TAKE THE KEY OUT OF CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! Disconnect the igniter clips and remove the engine. Take the plug and igniter out of the engine. If the igniter has burned, it worked but did not ignite the engine because it was not touching the propellant inside the engine. Put a new igniter all the way inside the engine without bending it. Push the plug in place. Repeat the steps under Countdown and Launch.

PRECAUTIONS
NAR Safety Code

© 2003 Estes-Cox Corp. All rights reserved. PN 60564 (3-03)