DIME SIZED DISC

1/16" SQUARE BALSA

TOP "SAIL" OR FIN

GLUE COVERING TO VERTICAL + CROSS PIECES. (EDGES ARE FREE)

RUBBER HOOK

STEEL WIRE .025" OR .031" OR LONG SEWING PIN BEND AS SHOWN POKE END INTO BODY BIND WITH THREAD & GLUE

ROTOR BLADE

(OPPOSITE ROTOR BLADE)

VIEW OF UPPER ROTOR HUB

CARVE AND/OR SAND THESE SURFACES TO ANGLE AS SHOWN

1/16" SQUARE BALSA

TOP ROTOR

ROTATION

COVER BLADES ON TOP SIDE ONLY WITH TISSUE PAPER OR FRUIT + VEGETABLE BAG.

ATTACH COVERING WITH PERMANENT GLUE STICK OR SPRAY CONTACT CEMENT SUCH AS 3M77.

TRIM EXCESS OFF CAREFULLY.

POWER

SUGGEST 2 LOOPS OF 3/32" OR 1/8" RUBBER, 9" LONG, LUBRICATE AND "STRETCH-WIND" WITH GEARED WINDER. IF UNDERPOWERED (FAILS TO CLIMB), ADD A 3RD LOOP, AND/OR SHORTER LOOPS (7").

WIND MOTOR SO THAT ROTORS ROTATE IN DIRECTION AS SHOWN.

1/8"

1/16"

VIEW OF LOWER ROTOR HUB

LOWER ROTOR

ROTATION

BEARING MOUNTING

EXTRA PIECE OF 1/8" x 3/16" BALSA WITH GROOVE ON SIDE FOR THRUST BEARING. GLUE BLOCK & BEARING TO MOTORSTICK AS STRAIGHT AS POSSIBLE, BIND WITH THREAD AND GLUE.

MOTOR STICK (BODY)

ROTOR HUBS AND MOTOR STICK ARE 1/8" x 3/16" BALSA

ROUGH-UP OUTSIDE OF BEARING WITH COARSE SANDPAPER TO HELP THE GLUE TO HOLD IT

Boxfly

Helicopter designed to fit in copy paper box
David Aronstein – August 2024
Sheet 1 of 3 – Construction Plan

THRUST BEARING

1/16" ALUMINUM TUBE OR NYLON BEARING

2 FLAT BRASS OR TEFLON WASHERS

SIDE VIEW OF LOWER ROTOR

(OPPOSITE BLADE)

ROTOR BLADE

DIME SIZED DISC

1/16" SQUARE BALSA

TOP "SAIL" OR FIN

GLUE COVERING TO VERTICAL + CROSS PIECES. (EDGES ARE FREE)

RUBBER HOOK
STEEL WIRE .025" OR .031" OR LONG SEWING PIN
BEND AS SHOWN
POKE END INTO BODY
BIND WITH THREAD & GLUE

ROTOR BLADE

(OPPOSITE ROTOR BLADE)

VIEW OF UPPER ROTOR HUB

CARVE AND/OR SAND THESE SURFACES TO ANGLE AS SHOWN

TOP ROTOR

1/16" SQUARE BALSA

ROTATION

COVER BLADES ON TOP SIDE ONLY WITH TISSUE PAPER OR FRUIT + VEGETABLE BAG.

ATTACH COVERING WITH PERMANENT GLUE STICK OR SPRAY CONTACT CEMENT SUCH AS 3M77.

TRIM EXCESS OFF CAREFULLY.

POWER

SUGGEST 2 LOOPS OF 3/32" OR 1/8" RUBBER, 9" LONG, LUBRICATE AND "STRETCH-WIND" WITH GEARED WINDER. IF UNDERPOWERED (FAILS TO CLIMB), ADD A 3RD LOOP, AND/OR SHORTER LOOPS (7").

WIND MOTOR SO THAT ROTORS ROTATE IN DIRECTION AS SHOWN.

1/8" 1/16"

VIEW OF LOWER ROTOR HUB

LOWER ROTOR

ROTATION

BEARING MOUNTING

EXTRA PIECE OF 1/8" x 3/16" BALSA WITH GROOVE ON SIDE FOR THRUST BEARING. GLUE BLOCK & BEARING TO MOTORSTICK AS STRAIGHT AS POSSIBLE. BIND WITH THREAD AND GLUE.

MOTOR STICK (BODY)

ROTOR HUBS AND MOTOR STICK ARE 1/8" x 3/16" BALSA

ROUGH-UP OUTSIDE OF BEARING WITH COARSE SANDPAPER TO HELP THE GLUE TO HOLD IT

Boxfly
Helicopter designed to fit in copy paper box
David Aronstein – August 2024
Sheet 1 of 3 – Construction Plan

THRUST BEARING
1/16" ALUMINUM TUBE OR NYLON BEARING

2 FLAT BRASS OR TEFLON WASHERS

SIDE VIEW OF LOWER ROTOR

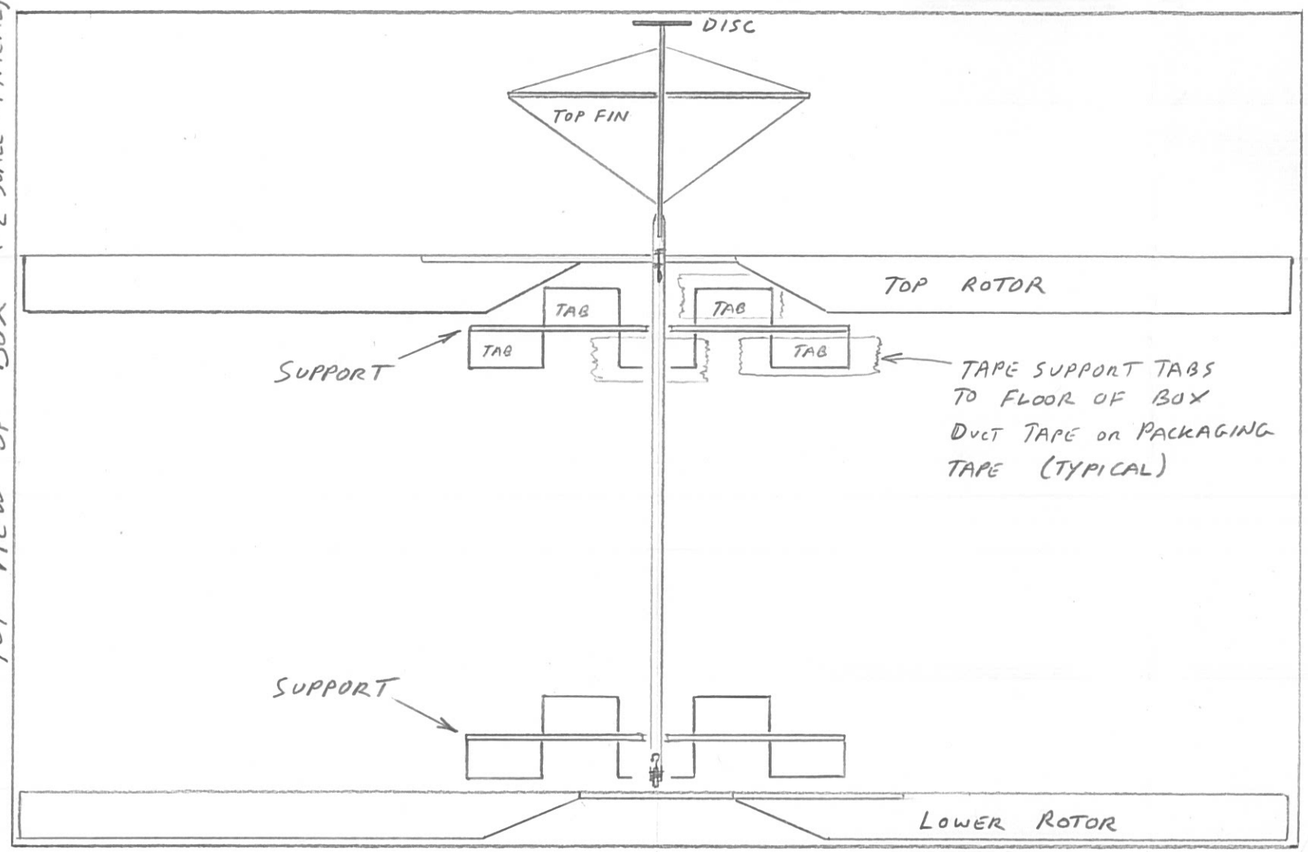
(OPPOSITE BLADE)

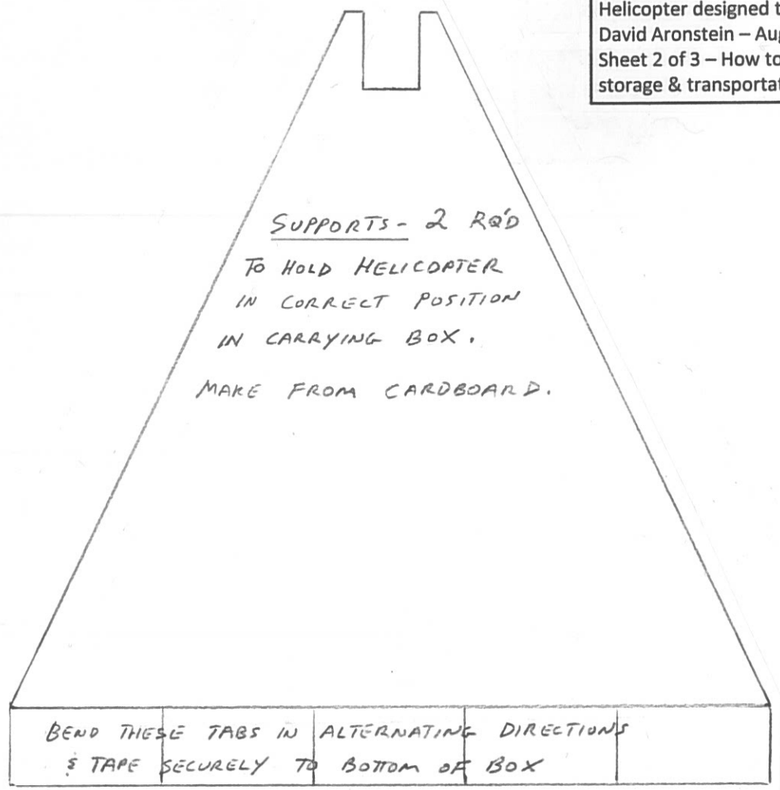
ROTOR BLADE

Boxfly

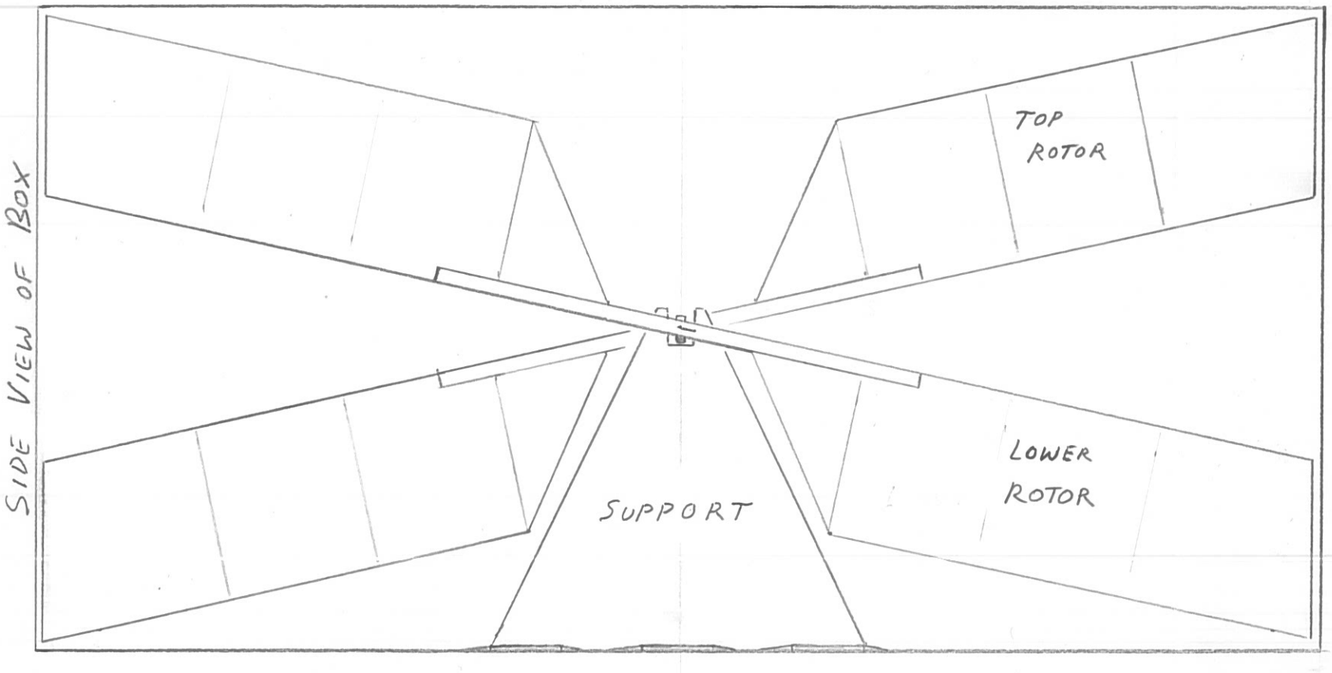
Helicopter designed to fit in copy paper box
David Aronstein – August 2024
Sheet 2 of 3 – How to support in box for storage & transportation

Top View of Box (½ scale - typical)

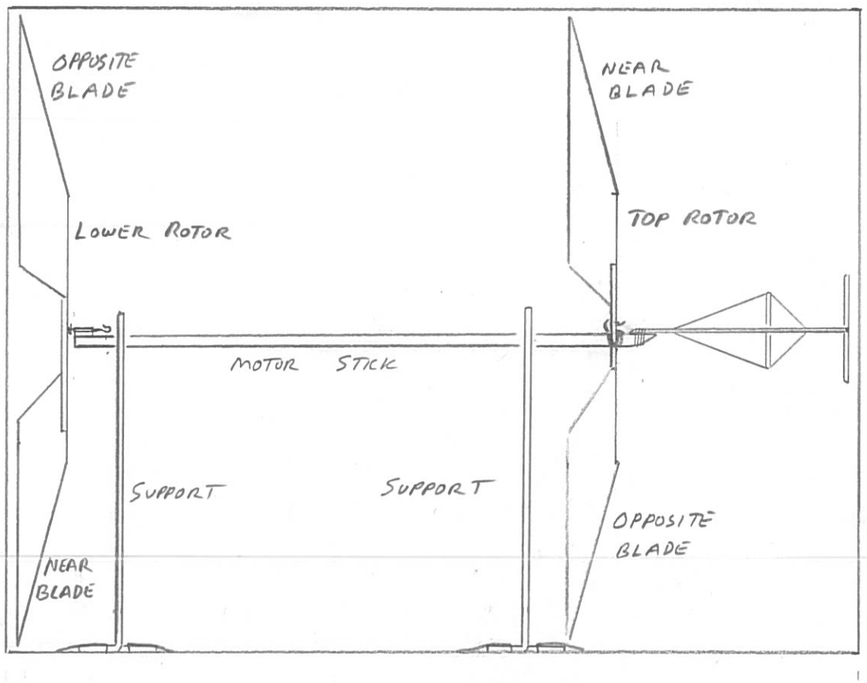




Side View of Box



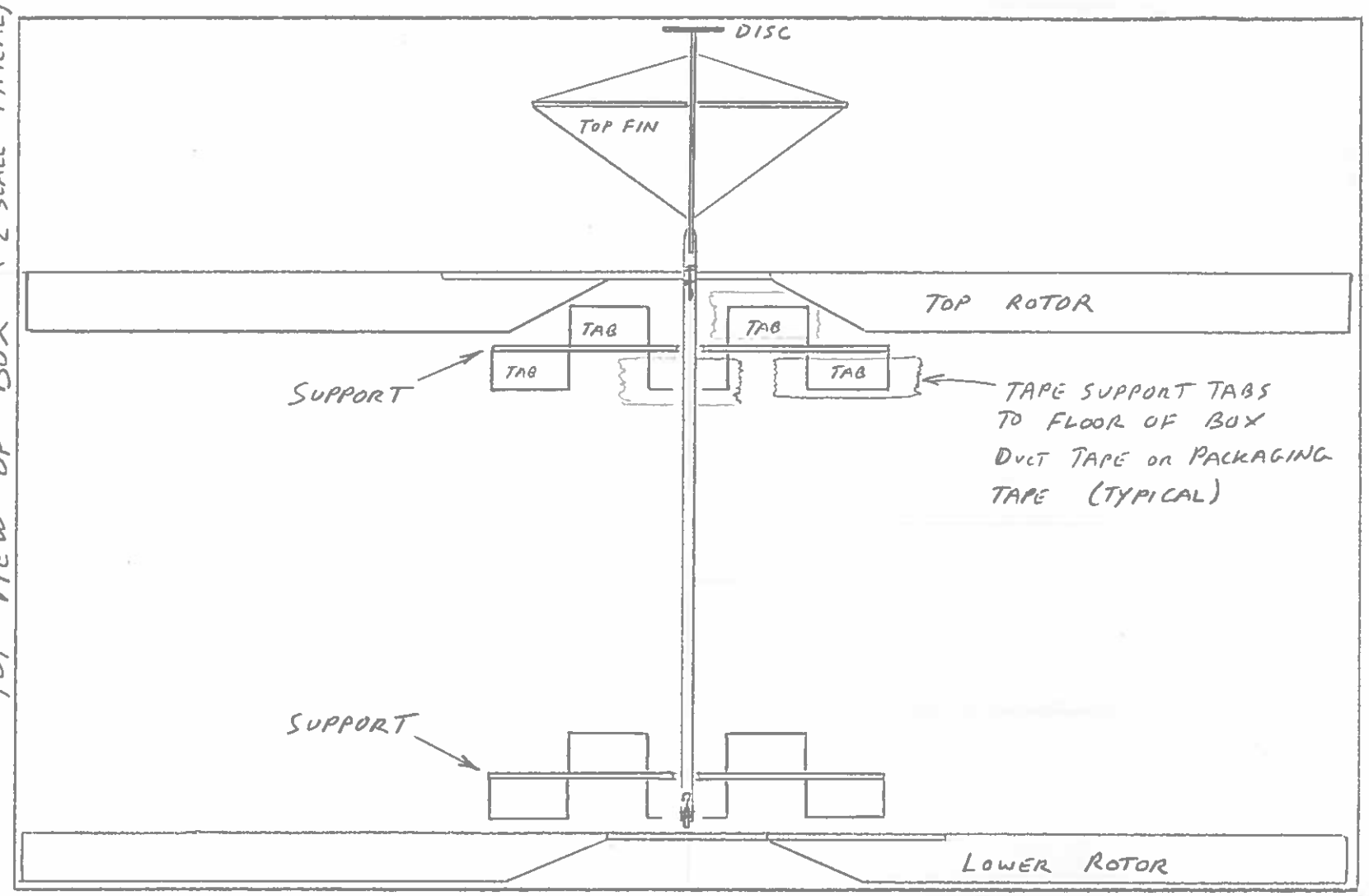
End View of Box

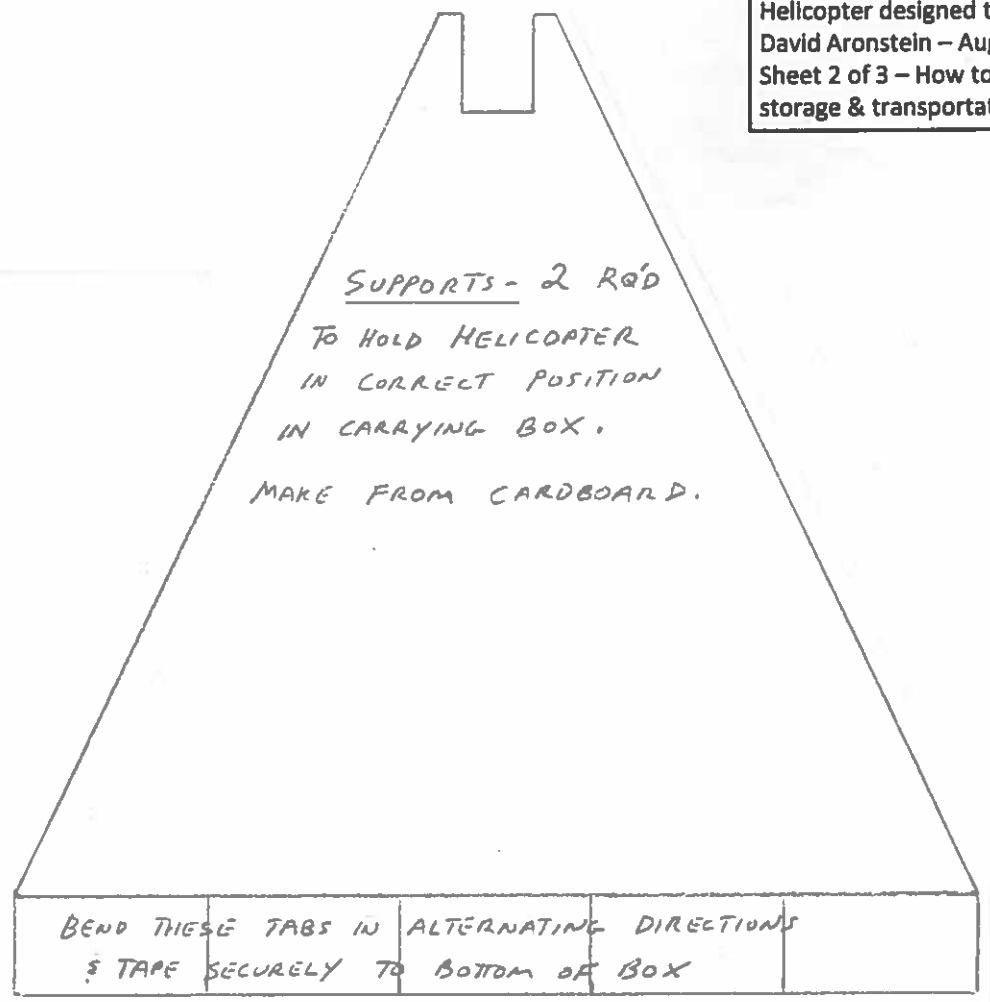


Boxfly

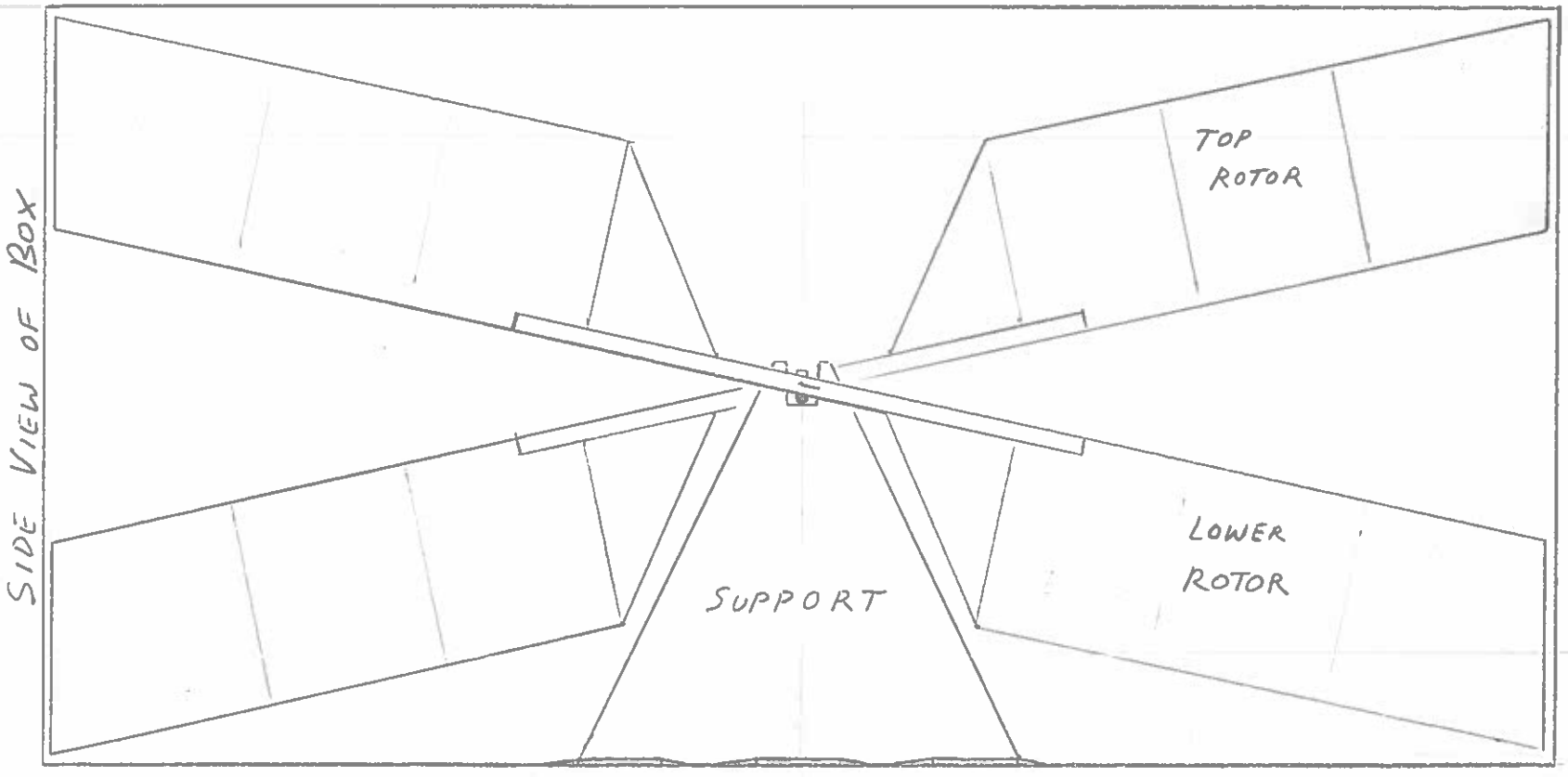
Helicopter designed to fit in copy paper box
David Aronstein – August 2024
Sheet 2 of 3 – How to support in box for storage & transportation

Top View of Box (½ scale - typical)

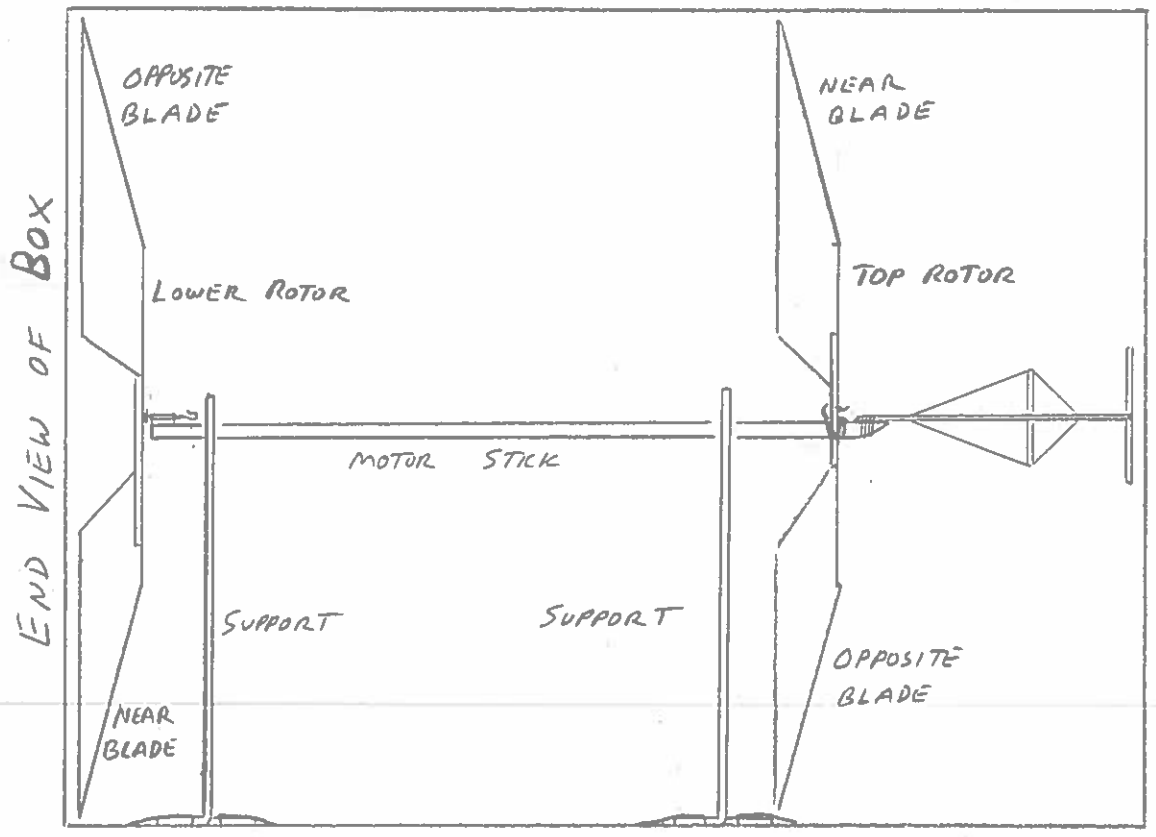




Side View of Box



End View of Box



DISC

TOP FIN

POST

BRACES $\frac{1}{16}$" SQUARE BALSA

THRUST BEARINGS
AND HOOKS ON BOTH ENDS
ALLOWS USE OF 2 MOTORS

TIP RIB
4 REQUIRED

MAIN RIB
12 REQUIRED

AIRFOIL RIBS
LIGHT $\frac{1}{16}$" SHEET BALSA

Boxfly

Helicopter designed to fit in copy paper box
David Aronstein – August 2024
Sheet 3 of 3 – Optional performance improvements

DISC

TOP FIN

POST

BRACES $\frac{1}{16}$" SQUARE BALSA

THRUST BEARINGS
AND HOOKS ON BOTH ENDS
ALLOWS USE OF 2 MOTORS

TIP RIB
4 REQUIRED

MAIN RIB
12 REQUIRED

AIRFOIL RIBS
LIGHT $\frac{1}{16}$" SHEET BALSA

Boxfly
Helicopter designed to fit in copy paper box
David Aronstein – August 2024
Sheet 3 of 3 – Optional performance improvements