Personal Secretary

This handsome mahogany desk is beautiful and useful.

Back when letters were made of paper and ink and the word "mail" was complete without an opening "e," every home had a place to write. And while it may have been little more than a plain table with a drawer for supplies, the more upscale among us had a dedicated piece of furniture-something that showed good taste and served its intended use. Our mahogany secretary is a typical example. When closed, its drop-front lid keeps all your papers neatly out of sight, yet when open, the lid creates an ample writing surface for handling the bills or that belated letter.

Although most of the parts are made from standard 13/16-in. lumber, some inside pieces are 1/2 in. thick and the legs are 2-1/4 in. thick. If your dealer can't plane the wood to these specifications, try a local cabinet shop. We used mahogany-veneer, flakeboard-core stock for the door and back panels.

With its deep brown
mahogany finish,
our drop-front secretary
adds a touch
of distinction to any room.
And, with
ample storage space inside,
it's the ideal
organizer.
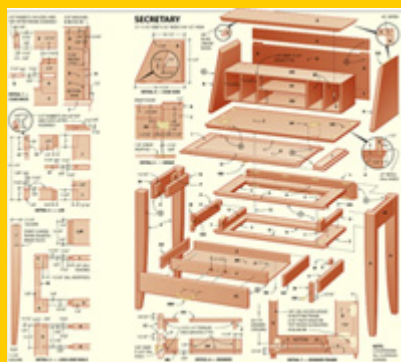
MATERIALS LIST--SECRETARY		
Key	No.	Size and description (use)
A	4	2-1/4 x 2-1/4 x 29-3/16" mahogany (leg)
B	2	13/16 x 14-1/2 x 16-11/16" mahogany (side)
C	1	13/16 x 17 x 33" mahogany (bottom)
D	1	13/16 x 10-7/8 x 32" mahogany (top)
E	1	13/16 x 2-13/16 x 30-7/8" mahogany (back rail)
F	1	13/16 x 2-1/2 x 30-7/8" mahogany (back rail)
G	2	13/16 x 2-13/16 x 10-1/8" mahogany
		(back stile)
H	1	13/16 x 2-3/8 x 27-3/8"

		mahogany (lid rail)
I	1	13/16 x 2 x 27-3/8" mahogany (lid rail)
J	2	13/16 x 2-13/16 x 15-5/8" mahogany (lid stile)
K	2	13/16 x 1-5/16 x 29" mahogany (base rail)
L	1	13/16 x 4-1/4 x 29" mahogany (base rail)
M	2	13/16 x 4-1/4 x 13" mahogany (base rail)
N*	1	1/2 x 9-3/8 x 26" flakeboard (back panel)
O*	1	1/2 x 12 x 26-5/8" flakeboard (lid panel)
P	4	1/2 x 2-1/2 x 2-5/8" mahogany (spacer)
Q	2	13/16 x 2-5/8 x 11-1/2" mahogany (guide)
R	2	13/16 x 3 x 21-1/2" mahogany (frame rail)
S	4	13/16 x 3 x 12-13/16" mahogany
		(frame side)
T	2	13/16 x 2-5/8 x 3" mahogany (frame divider)
U	2	13/16 x 1-7/16 x 11-1/8" mahogany (blocking)
V	2	3/4 x 2-9/16 x 14-1/8" mahogany
		(lid support)
W	2	3/4 x 13/16 x 4-3/16" mahogany (facing)
X	2	1/2 x 1-1/8 x 1-1/8" mahogany (stop)
Y	1	1/2 x 2-9/16 x 23-11/16" mahogany (front)
Z	1	1/2 x 1-15/16 x 23-11/16" mahogany (back)
AA	2	1/2 x 2-9/16 x 14-1/8" mahogany (side)
BB	1	1/4 x 12-7/8 x 23-11/16" plywood (bottom)
CC	1	13/16 x 4-3/16 x 25-3/4" mahogany (drawer face)

DD	2	1/2 x 9 x 30-3/8" mahogany (insert top/bottom)
EE	6	1/2 x 7 x 9" mahogany (insert partition)
FF	1	1/2 x 9 x 12-7/8" mahogany (insert shelf)
GG	as reqd.	No. 20 plate
HH	4	2" No. 8 fh woodscrew
II	4	1" No. 6 fh brass woodscrew
JJ	4	1" No. 8 rh woodscrew
KK	3	3/4" No. 6 fh woodscrew
LL	10	11/4" No. 8 fh woodscrew
MM**	1	Drawer pull, Whitechapel No. 13PWLID
NN**	1	Lid pull, Whitechapel No. 76KSB2P
OO**	2	Support pull, Whitechapel No. 76KSP
PP**	2	Hinge, Whitechapel No. 166HISP

Misc.: 120-, 150-, 180-, 220-grit sandpaper; Behlen Pore-O-Pac grain filler (No. 103-046, mahogany), filler solvent (No.103-049), Solar Lux Medium Brown Mahogany stain (No. 847-466) and retarder (No. 847-585), available from Woodworker's Supply, 1108 N. Glenn Rd., Casper, WY 82601; 800-645-9292; www.woodworker.com; Waterlox Original Sealer/Finish (Waterlox Coatings Corp., 9808 Meech Ave., Cleveland, OH 44105).

* Mahogany veneer panel.

** Available from Whitechapel Ltd., P.O. Box 11719, Jackson, WY 83002; www.whitechapel-ltd.com.

Making The Legs

We ripped the four legs from one board. First, crosscut the board a few inches longer than required and plane one edge straight and square. Use a circular saw and ripping guide to cut blanks slightly wider than specified so you can plane the edges smooth and to exact size. Rip each piece by cutting half the depth from opposite faces to reduce the strain on your saw (Photo 1).

Mark the mortise locations and use a router and edge guide to cut the side- and back-rail mortises (Photo 2). Use a block clamped across each front leg to guide the horizontal front-rail cuts. Square all the mortises with a sharp chisel.

Make a full-size template to transfer the tapering leg shape onto two sides of each leg blank. Then, use a sharp plane to trim the faces to the line. When all legs have been shaped, crosscut them to finished length.

Case Panels

The wide panels are made by gluing together narrower stock. We used a router table and a straight bit to true the edges for good joints. To joint stock in a router table, set up the fence to take a fine surfacing cut on the board edge. Then offset, through shims or adjustment, the outfeed side of the fence so it's aligned with the bit and will support the wood after the cut. Some commercial router tables have this feature built in. After adjusting the table for jointing, pass the mating edges of the stock past the cutter to trim them straight (Photo 3).

Use joining plates spaced 6 to 8 in. apart when gluing the panel pieces. After about 30 minutes, scrape excess glue from the surfaces and let the glue dry. Then, saw the panels to size with the appropriate beveled cuts (Photo 4). Keep the blade on the waste side of the layout line and plane the cut edges smooth.

Use a circular saw to create the leg blanks. Cut halfway through the stock, then flip it over to complete the cut.

Lay out the mortise locations and use a router and edge guide to cut the mortises. Square the ends with a chisel.

Shim the outfeed fence of a router table so it's aligned with the bit, and use your table to joint the stock edges.

After gluing up the panels, use a circular saw to cut the panels to size with the appropriate angled ends and edges.

Lay out and cut the joining plate slots at the miter joints between the top and sides, and the joints between the bottom and sides. Then, rout the grooves in the side and top panels that house the case back. Rip and crosscut frame parts for the case back and drop-front lid to specified dimensions. At the same time, cut the rail stock for the desk base to finished size.

Rout the tenon cheeks on the back-frame stiles, lid rails and base rails with a 3/4-in. straight bit and router table (Photo 5). A scrap board behind the workpiece prevents tearout at the end of the cuts. With the cheeks shaped, use a backsaw to cut the shoulders at the top and bottom edges of the base rails.

Cut all of the tenons with a router table and miter gauge. Use scrap stock behind the work to prevent splintering.

Install a 3/8-in.-dia. bit in the router table and cut the grooves along the inside edges of the door and back-panel parts. Re-adjust the height of the bit to cut the mortises in the ends of the back rails and lid stiles, and square the mortise ends with a sharp chisel. Rout the rabbets around the back and lid panels, and test the fit of the panel edges in the frame grooves.

Apply glue to the back mortise-and-tenon joints and assemble the stiles to the bottom rail. Slide the panel into position (Photo 6) and then add the top rail. Check for square, and assemble the lid in a similar manner.

Assemble the back-panel rail and stiles, then slide the panel in its groove and add the remaining rail.

Saw the beveled edges at the top and bottom of the door. Then, rout the rabbets around three

sides of the back panel and along the top and ends of the door.

Case Assembly

Apply glue to the case miter joints, slots and plates, and join the sides to the top. Clamp the parts in both directions to pull the joints tight (Photo 7), and check that the assembly is square.

Slide the back panel into the grooves (Photo 8), and join the sides to the case bottom panel.

Apply glue and clamp the sides to the top. Clamp in both directions and check that the assembly is square.
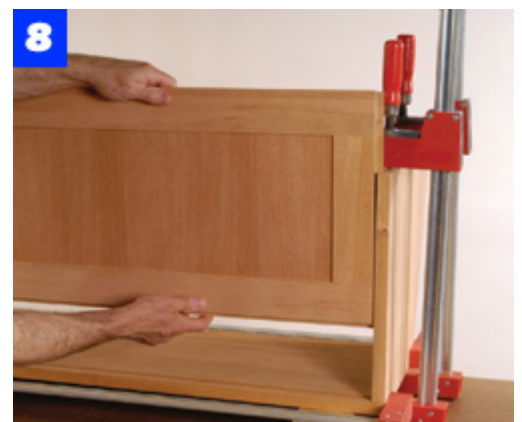
Slide the back panel into the grooves in the case sides. After the glue dries, join the bottom to the sides with plate joints.

Building The Base

Spread glue on the side-rail/leg joints and clamp each side subassembly. Cut the spacer blocks and guide strips to size, and glue them to the side rails as shown in the drawing on the first page.

Cut the parts for the drawer frames to size, and add the joining plate slots. Spread glue on the frame joints and assemble the top and bottom frames. Then, use plate joints to attach the frame divider. Bore and countersink pilot holes in the drawer guide strips, and secure them to the bottom frame with screws (Photo 9).

Lay out and cut the plate slots for joining the back rail to the drawer frames. Also, bore and countersink holes in the top frame for mounting the case. Note that some of the holes in the top frame are elongated to allow the case bottom to expand and contract. Then, bore access holes in

Join the frame dividers to the bottom drawer frame with joining plates. Secure the drawer guides with screws.

the bottom frame.

Join the top frame to the bottom frame assembly, and then join the back rail to both drawer frames. When the glue has set, join the drawer-frame/rail assembly to the two leg subassemblies (Photo 10).

Cut the lid supports and facing strips to size and join the parts with plates and glue. Cut the stopblocks from 1/2-in.-thick stock and bore the pilot holes for securing them to the supports. Slide each support into its slot and fasten the stopblock. You'll remove the stop when it comes time to apply the finish. Place the case on top of the desk base, and fasten the parts temporarily.

Lay out the hinge locations on the case bottom and door. Use a sharp chisel to cut the mortises (Photo 11). Mount the hinges and test the operation of the door. If it binds against the case side, simply sand or trim the side or door rabbet until it works smoothly.

Drawer And Storage Insert
Cut the drawer parts to size and use a router table to make the joints. Apply glue to the sides, front and back, and then assemble the box and check for square. Slide the bottom panel into place and screw it to the drawer back.

Mount the drawer pull to the drawer face, and screw the face to the drawer box. Test the fit of the drawer in its opening and trim where necessary. Then, temporarily mount the lid pulls and the support pulls.

Cut the parts for the storage insert and rout the dadoes in the top, bottom and center partitions. Apply glue and assemble the parts (Photo 12). Bore and countersink screwholes in the top of the insert, slide it into position and screw it to the case top.

Finishing
Disassemble the secretary and sand all parts with 120-, 150-, 180- and 220-grit sandpaper. To achieve a smooth finished surface, we applied Behlen Pore-O-Pac filler before staining. First, thin the filler with filler solvent until it has the

Join the side-rail/leg assemblies to the drawer-frame/rear-rail assembly. Use clamps to pull the joints tight.

Lay out the hinge mortise locations on the case bottom and door. Use a sharp chisel to cut the mortises.
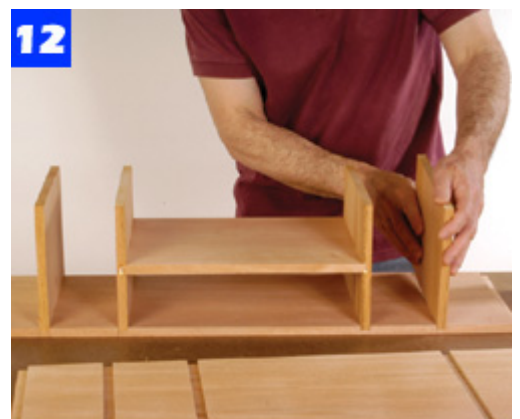
Cut all the dadoes for the storage insert on the router table. Then assemble the unit with glue and clamps.

consistency of thick cream. Working on only a small area at a time, brush the filler into the woodgrain and let it set until it appears dull. Rub the filler off the surface and into the grain with burlap cloths and remove all excess. Allow the filler to dry overnight and sand lightly to remove any residue.

To achieve a deep reddish brown, we applied Behlen Solar Lux Medium Brown Mahogany stain. This is a solvent-based dye that dries quickly, so it's best to add Solar Lux retarder to slow the drying time and prevent lap marks. Let the stain dry overnight before applying the first coat of finish.

For our surface finish, we applied three coats of Waterlox Original Sealer/Finish. Liberally soak the wood surface with finish and wait about 20 minutes before wiping off the excess. After overnight drying, lightly sand the surface with 320-grit sandpaper and dust it off thoroughly before applying a second coat. Apply the final coat using the same technique. When the last coat is dry, rub the surface with 4/0 steel wool to remove any dust nibs and give the piece a warm glow. Polish with a soft cloth. Reassemble the desk and install the hardware. To ease drawer and door-support operation, apply a light coat of paste wax to the parts and then polish.

SECRETARY

17-11/16" DEEP X 33" WIDE X 44-1/2" HIGH

DETAIL 1 — CASE BACK

CUT RABBETS ON SIDES AND TOP AFTER FRAME ASSEMBLY

CUT GROOVES IN **B** AND **D**

3/8"
5/16"
3/8"
7/32"
3/8"
E 13/16"
2-7/16"

7/16"
3/8"
N
7/32"
3/4"
G
F

D
1/4"
3/8"
9/16"
E
1/16" REVEAL (TYP.)
B
N
F
1/2"
SECTION VIEW
C

DETAIL 2 — LID

7/16"
H 5/8"
5/8"

CUT RABBETS ON LID TOP AND SIDES AFTER ASSEMBLY

5/8"
7/16"

O
-24°
3/8"
2"
H
3/4"
7/16" 7/32"
O
3/8" 7/32"
J

15-1/4"

3/8"
7/32"
7/32"
2"
I
3/8"
-24°
3/4"
1-5/8"
J
3/8"
13/16"

DETAIL 3 — LEGS AND RAILS

2-1/4" SQUARE
START CURVED TAPER ON BOTH INNER FACES
5"

1/4"
L,M
3-3/4"
1/4"

11/32" 7/32"
A
3/8"
7/32"
3/4" (ALL TENONS)
13/16" (ALL MORTISES)
L
M

1/8"
1/4"
A
13/16"
1/4"
K

11/32" 3/8" 7/32"
1/4"
3/8"
7/32"
K
3-3/4"
A
3-1/16"
3/8"
K

1-1/8" SQUARE

DETAIL 4 — CASE SIDE

10-1/2"
114°
B
7/16" 114°
3/16"
14-1/2"
16-11/16"

24° BEVEL (FRONT EDGE)

DETAIL 5 — HINGE

DROP DOOR
1/2"
B
3-9/16"
3"
C
PP
1-3/4"
1-1/16"
1-1/2"

1/8" HINGE MORTISE
1/16" GAP

DETAIL 6 — DRAWER

25/32"
AA
CC
13/16"
Y
Z
1/4 X 1/4" TONGUE AND GROOVE (TYP.)
1-1/4"
Z
1/4"
AA
3/8"-DEEP X 3/4"-DIA. HOLE
BB
3/8"

DETAIL 7 — DRAWER FRAME

24-1/4" DRAWER OPENING
3/8"-DIA. ACCESS HOLES IN BOTTOM FRAME, 3/16" PILOT HOLES IN TOP FRAME ELONGATED IN **S** AND **R**
K
R
TOP
L
T BOTTOM **U**
S
13/16"

NOTE: COUNTERSINK ALL FLATHEAD SCREWS

45° MITER
D
B
24° BEVEL (ALL SIDES)

D
E
G
1/4"-DEEP X 1/2" DADO (TYP.)
N
G
GG

B
3-3/4"
3-3/4"
3"
DD
EE
FF
II
3"
DD
F
B

C
PP
GG
J
C
J
I **O**
H
B
1/2"
C
1/2"
A

13/16"
M
Q
P
NN
L

V
W **X**
U
S **K** **R** **S**
HH
P
A
T
OO
S **K** **R** **T**
U
S
AA

Z
3-1/2"
BB
JJ
Y
KK
CC
MM
AA
W
OO
JJ **X**
V
13/16"
M
A
L
R
TOP
K