

My Ultimate Router Table

By **Geoff Birtles**. Evening box makers group

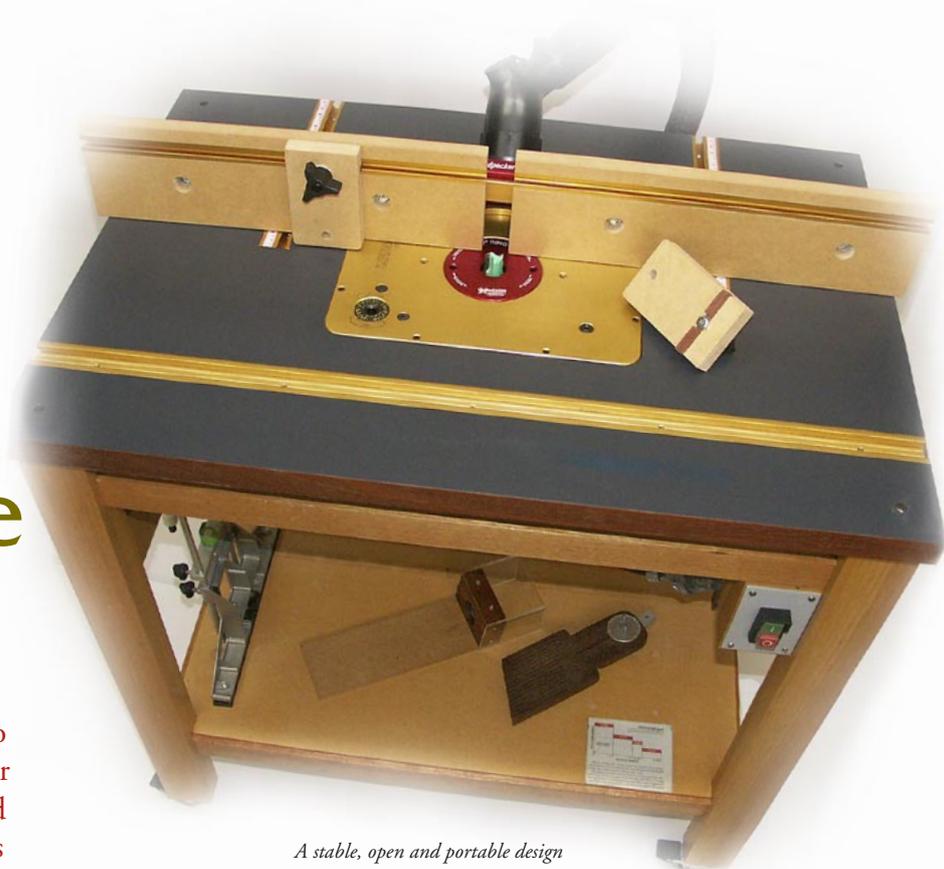
I am pretty sure it was Patrick Speilman who first coined the phrase “The Ultimate Router Table” in his excellent book “Router Jigs and Techniques”. Patrick passed away some years ago after a distinguished international career as an innovative woodworker, inventor, author and teacher.

Speilman leaves a rich legacy of woodworkers who have each been inspired to build their own ultimate router table. This picture story is about mine. I first built it some eight years ago and it still gives me a great deal of pleasure - as a most versatile tool and as work in progress - I never stop modifying it! The text is written in the first person because router tables are personal. I hope my views help inspire you to build your ultimate router table and become as passionate and opinionated about it as I am about mine.

TABLE DESIGN & CONSTRUCTION

You can get a pretty good idea of this from the introductory pic. The key question before you start is - enclosed cabinet style or open frame? Speilman went for the cabinet, I opted for the open frame. I believe cabinets look like kitchen cupboards and box you, and the router; in. An open frame provides more flexible work options, has a sturdier feel and a more professional look. But, its a bit like clothes, a very subjective and personal call.

The router table's frame is mortice and tenon construction from KD hardwood. The bench top is 32mm composite engineered panel board sandwiched between laminate and edge trimmed in 10mm Jarrah. Particular attention was paid to parallelism of the front and back edges and front mitre gauge rail. The top sits on the frame corner posts with the stretchers set down by 50mm.



A stable, open and portable design provides great versatility for many tasks additional to routing.



Hitachi M12V mounted to a very substantial Woodpeckers Unilift. Note the 'no-voltage release' on/off switch at front RHS of table

THE ROUTER & LIFT

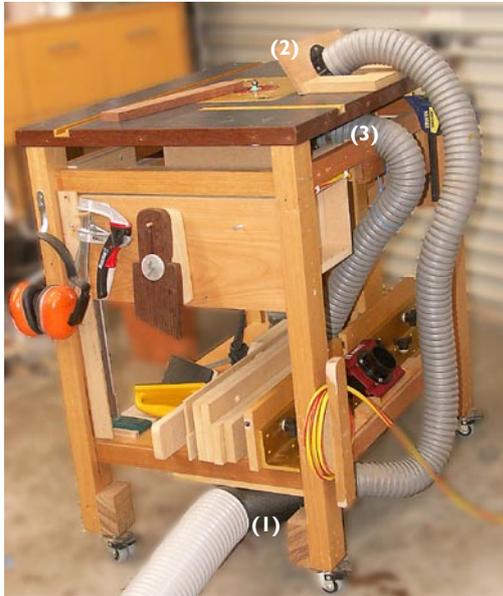
This is my second router table and lift, so I had some negative learning experiences to draw upon. Like, router bearing failure, circuit board overload and, most annoying, sticky height adjustment (all from a very expensive integrated German router, lift and table insert).

This time I opted for brute power; commercial durability and no finesse - a dedicated 3.5HP Hitachi M12V. Not so expensive either. The finesse was provided by a Woodpeckers Unilift Router Lift. This is an incredibly sturdy, accurate and easy to use lift with both bit height adjustment and locking from the top insert plate. (For more on this check the information sources side bar).

This combination is now some three years old with no problems despite much use and abuse. It is a particular joy to use in combination with the Gifkin dovetail jig. Fine height adjustment results in minimal pin protrusion and flush trimming.

DUST & CHIP COLLECTION

I have to admit I am rather “obsessive” about this but I like to work clean and breathe clean - I also like a clear view of the work piece.



A 4"x2" Y splitter draws dust from above and below table

My shop 4" 2HP dust system is blast gated from the table saw to the router table through a detachable hose. A 4"x2.5" Y splitter (1) mounted under the router table feeds one hose to the fence (or a Super Scooper table top dust collector (2) for pattern following work) and the second to a plenum box (3) under the table top.

The plenum box surrounds and seals



Under table plenum box surrounds router to draw dust through a 2.5" outlet.

around the Hitachi's router body with a flexible Polyurethane sheet wrap, but not its air intake. The poly coupling is sized to allow height adjustment of the entire router mechanism.

This arrangement eliminates any substantive dust or shavings from above or below the table (including router bearings). It also quiets the operation and remarkably, draws the work piece down to the table through fairly strong suction.



The Woodpecker's Unilift lift and LE Router table fence as supplied. The router's base plate is removed so that it mounts directly to Unilift. Note robust construction and bearings. Scaletrack, composite base panel and collet extension are extra, but you can live without them. I found the XTreme collet extension caused bad vibration and was not really needed.

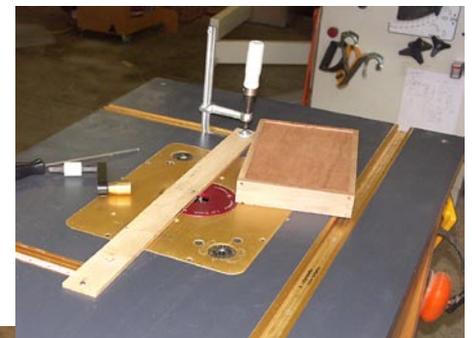
BASIC ROUTING FUNCTIONS

WITH FENCE

The following pic shows the fence in place with some shop made accessories. The fence is Woodpecker's extruded aluminium LE Router Table Fence which comes complete with sliding split sacrificial MDF fences (for jointing) and a 2.5" dust collection port.

Scale Track channel. The Scale Track is a bit of an overkill, you don't use the measuring scale in practise and it gets knocked around. Regular T Track would do fine. The mitre track channel in front of the table is useful for mounting a lockable feather board or for using a sliding mitre gauge.

I changed the factory sacrificial MDF fence slides to taller shop made slides for more work piece stability and to accommodate T Bar channelling. The channelling allows the fitting of shop made work stops (R & L) and an overhead feather board hold down.



The fence adjusts back and forwards and locks with 3/8" T Bolts in Woodpecker's



LE Aluminium fence with shop made T channelled MDF slides, feather boards and work stops. Note tool rack on LH side of table.

Hinge Mortising. Shopmade fence is pinned on the left by a single screw and adjusted and secured on the RH side by a channel clamp.

For small box hinge mortising and panel raising I do not use the Woodpecker's LE fence. I simply pin the left end of a piece of wood with a screw into the table (same hole each time!) and secure the right hand side with an adjustable channel clamp.

COMPLEX FUNCTIONS

STOCK FEEDING GAUGE

To quote Speilman, "the stock feeding gauge is to the Ultimate router table what the mitre gauge is to the table saw, and more".

The pic alongside shows my ultimate version. If you like the accuracy of a stock feeding sled on your table saw, you'll love the convenience of one on your router table. Not only does it accurately cross cut dados, grooves, stopped slots and tenons, it makes wonderful finger joints using a sacrificial indexing fence.

The advantage of this design is that the stock rides on the table, not the sled. The sled locates with milled Jarrah hardwood strips. The LHS runner rides within the Mitre Track and the RHS strip rides flush against the outside (rear) of the table.

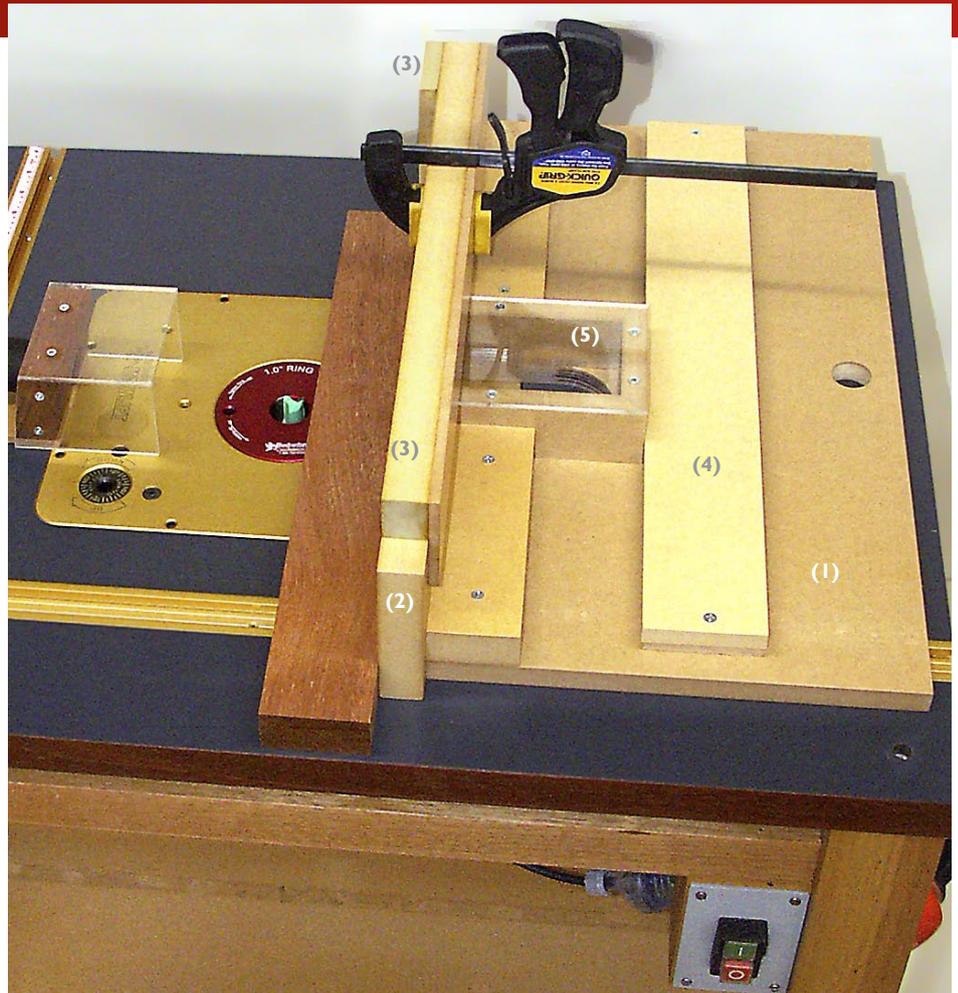
A shop made adjustable stop clamps to the sled's fence to secure the work piece and to prevent it from being drawn across across the router bit toward the back of the table.

PATTERN FOLLOWING

Woodpeckers supply lockable router table ring inserts of varying throat sizes. These are a confidence boosting safety feature, particularly when used with bearing guided bits used for the Gifkin dovetail jig, or for rebating the inside edge of box bottoms.



Similar convenience and safety features apply when insert rings are used in conjunction with the supplied starter pin for freehand or bearing guided pattern following work. The shop made Super Scooper dust collector comes into its own for these tasks.



Above Stock Feeding Gauge. (1) Sled with runners, (2) Fence, square to mitre gauge slot and back of table, (3) Work piece stop, slides along top of fence and locks with clamp, (4) Stop holster, (5) Sighting window. Repeatable accuracy.

Left Woodpecker's insert rings (red), starter pin (white) and shop made dust Super Scooper for freehand and pattern following work. Dust collects from above and below table.

AUXILIARY USES

It is the auxiliary use options that make open frame construction the way to go in my opinion. For a start you can temporarily store a lot of clamps, sanders, jigs, fences, stops, and whatever else you need for the job at hand on the open accessible bottom shelf.



Auxiliary 6mm MDF top locates with dowells at each corner to protect router and laminate top. Stretchers located some 50mm under top allow clamping from all four sides

ASSEMBLY, GLUE-UPS & MORE

A simple 6mm MDF auxiliary top registers with dowells at each table corner to cover the router laminate table top. Believe it or not, this is the most used configuration. (Like whose work bench is not covered in tools and WIP). Now you can get down and dirty!

directly to the table on all four sides for assembly, gluing, trimming, sanding or whatever else needs secure holding away from the clutter of your workbench.

The open design, table lip and stretchers set down some 50mm under the table top, allow for clamping work pieces

I even spring clamp a plastic sheet over this auxiliary top so that I can use the table for mixing spray finishes, hand rub oiling, and clean ups.



SANDING

The 6mm auxiliary top is good for sanding with a mat but for more serious tasks and irregular shaped objects an 18mm MDF clamping top with 20mm holes to secure side push clamps is incredibly useful. It's not too hard to create an edge seal under the 18mm top so that you can draw dust down and through the router cavity - but this is an overkill if your sanders are connected to a shop vac.

Above. A pattern drilled 18mm auxiliary top (1) locates at the router table corners to provide a secure side push clamping surface for trimming, cutting or sanding. The clamps used here are Festo. Note under table storage for Stock Feeding Sled on LH side (2) and router bit drawer on RH side (3).

Below Left. Place the 6mm auxiliary top on the router table and you have a sheet feeding trolley. Shown here - a heavy 2400x1200x18mm MDF sheet manoeuvred in front of a half panel saw ready for safe and accurate ripping.

SHEET STOCK

I am fortunate to own a Gabbet Mini-max sliding table saw. Its a half panel size so ripping a 2400x1200mm panel can be a real challenge for one person.

The Ultimate Router table (on four small, but heavy duty castors) makes feeding large sheets to the saw a realistic and safe option for an independent operator. The router table height, including the 6mm auxiliary top, is a couple of mm higher than the saw bench top.

I roughly lever the panel to be cut onto the router table and then finesse the panel and table to the saw. Set the saw fence, lock the router table castors and start feeding - so easy! (Your wife will appreciate this one - no more domestics about her strength, or lack of it).



CONCLUSION

There seems to be a good deal of inverse snobbery about router tables. Like, drill a hole in a piece of MDF, pin your plunge router under it and clamp the lot to whatever is going. Sometimes that works. However I suspect it's for those who have not discovered the potential of a good router table set up and those who are not prepared to dedicate a router to the task.

Equally, there are many innovators who take great pride in their wood working environment and great pleasure from a well conceived and well engineered router table. You can view some of their work on the web sites listed in the information side bar.

Geoff's Ultimate Router Table, and construction photos, are available for inspection by Manningham woodworkers. Readers with an interest are encouraged to read Spielman's book (books), listed in the sources/information sidebar.

Table peripheral construction features vary in some photos because Geoff's table is always WIP and a journey of discovery.

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INFORMATION SOURCES

SPEILMANS BOOK

ROUTER JIGS & TECHNIQUES - PATRICK SPEILMAN
ISBN 0-8069-6694-7 (PBK.) STERLING PUBLISHING CO. INC.
NY DISTRIBUTED IN AUST BY CAPRICORN LTD LANE COVE NSW

STERLING [HTTP://WWW.STERLINGPUBLISHING.COM](http://www.sterlingpublishing.com)

UNILIFT, LE FENCE

Woodpeckers USA
<http://www.woodpeck.com/index.html>

Professional Woodworkers Supply
<http://www.woodworksupplies.com.au/>

EXAMPLES OF OTHER SHOP MADE TABLES

<http://www.woodworksupplies.com.au/webcontent4.htm>

ROUTERS

<http://hitachi-powertools.com.au>

<http://www.triton.com.au/>

<http://www.festool.com.au/>