

Readers Write

The following comments and questions are presented by readers to Joseph Jenkins, author of the Slate Roof Bible and editor of Traditional Roofing Magazine:

Normally I do not bite the hand that feeds me, and your organization has been kind enough to send me your magazine which I read. However I am moved to write concerning the comments made in your Spring 2005 issue's Top Ten Mistakes article.

The characterization of "many roofing contractors" as "somewhere between cretin and ex-convict" is incorrect unwise and counterproductive. Your continuing description of roofers as "pathological liars, inept, unintelligent, ignorant, naïve and drunks" is damned uncalled for.

I have never known a good business person that insulted his customers; or a poor one that did and got by with it for long. I have never known a teacher who insulted his audience and got much of his point across.

I was taught not to sell negative. It does not work well and it reflects poorly on the seller. You may feel that tearing down contractors in general builds confidence in your listed contractors; it cannot but cast doubt on the process and your association. I will match the quality of our industry people with any.

The problems in the slate roofing universe are no different than those of the general roofing business and construction. Working to improve the industry does not include wholesale condemnation of the industry or its players.

Years ago I asked my father how he ended up as a roofing contractor: he answered "Just lucky!" If you keep this kind of commentary up, you will not remain so lucky.

TR: Being a roofing contractor myself since 1970 (I started contracting at the age of 18), and still working on slate roofs at the age of 54, I'm allowed to poke fun at the trade. Too much of the work my company does with slate roofs involves the removal and replacement of substandard work that had been done by previous "roofing contractors." Being a nationwide slate roof consultant, I see too many slate roof projects going into litigation. In the past year I have been involved, either as a consultant or an expert witness, in nine slate roof litigations and I have looked at several other slate roofs that are not far from the courtroom. In most cases, the roofers are at fault. Some of them belong in jail.

Having said that, I also am aware that there are many intelligent, conscientious, respectful and responsible roofing contractors, such as myself and yourself. We are people who want to advance the trade. But when any Tom, Dick or Harry can get laid off from the factory and pick up a hammer and call himself a roofer, quality control becomes a problem. Perhaps this isn't such an issue with asphalt shingle staplers, but we slaters make roofs that last a century or two, and workmanship, tradesmanship and integrity are of utmost importance to us. When we install a slate roof, we know our great-grandchildren will very likely be around to see it — as adults, long after we have died. Slate roofing is a serious undertaking that should be practiced by conscientious craftspeople. When I see slate roofs being slapped on by uneducated and inexperienced asphalt shinglers who just want to get their money and walk, I see the slate roofing industry being damaged and it gets my hackles up.

I'm currently working toward the establishment of a slate roofing training center in western Pennsylvania. I also help teach slate roofing courses at the new Slate Technology Center in Vermont, plus I speak nationally on the topic of slate roofs to architects, home inspectors, roofing contractors and others. Training and eventual certification are sorely lacking in the slate roofing trade today (unlike other types of roofing where manufacturers provide application training). In time, the roofing trades in the United States should be as respectable as in Europe where extensive training via established roofing schools is required prior to employment. But we have a long way to go.

In our local towns almost all state roofs have 2" head lap, and have worked well for 150 to 200 years. What is the point in 3" head lap? My dad's been roofing for 48 years. I've been at it 15 years and we would like your reason for 3" or more head lap.

TR: Three inch headlap is considered standard these days for new slate roof installations when the slope is greater than 6:12. When 6:12 or lower, 4" headlap is recommended. Many older slate, tile and asbestos roofs (usually with 10:12 or more slope) have only 2" headlap and have done fine for a century or more. Better to err on the side of caution and stick with a 3" headlap rather than a 2" when installing new slate roofs.

I was wondering if you know the following statement to be true or false: Underlayment is recommended by all slate tile manufacturers and the National Roofing Contractors Association Roofing and Waterproofing Manual, and so it follows by the International Residential Code in R905.1 and R905.6. It is also a requirement set by Underwriters Laboratories when assigning a fire rating to slate or any other shingles.

TR: Underlayment is recommended in the United States for use on new slate roof installations as a protective waterproofing material to keep the building dry until the slate is installed. It's also a good surface to chalk lines on when installing slate. Once the slate is installed, however, the underlayment is effectively obsolete — it's punctured full of nail holes and is expected to deteriorate beyond effective use over time, well before the slate has worn out. Some people want to argue that because underlayment is recommended, it must be an important element of a slate roof and therefore the thicker, beefier and more expensive, the better. A lot of slate roofs have been installed with no underlayment whatsoever and are still functioning quite well a century later. It's pretty hard to argue that underlayment is critical on a slate roof when you look at one installed 150 years ago, still in good condition, with no underlayment whatsoever. It's anybody's guess why underlayment would be required for fire-rating purposes. It's very flammable.

Do you have experience with ridge venting when installing a slate roof? Is this necessary with a slate roof?

TR: Ridge ventilation is necessary to ventilate roof systems that do not allow air flow and have no other means of ventilation, such as via gable vents or attic vents. Traditionally, American slate roofs are made of lumber boards covered with 30 lb. felt underlayment (or no underlayment at all). This roof assembly, which is easily reproducible today, allows air transpiration without additional ventilation in most cases, which is why you rarely see ventilation systems on older slate roofs. The advent of plywood roof decking, peel and stick underlayment, and asphalt shingle roofs has created roof assemblies that prevent air transpiration and therefore require ventilating systems.

Ridge venting on slate roofs can be achieved by purchasing ventilation systems designed for slate roofs, such as TopSlate™ from Castle Metal Products (ph: 847-806-4540). Alternatively, a low-profile ridge vent can be achieved by using a plastic vent installed underneath the ridge slates (see Figure 1, page 19).

As a general rule, is it true that roof nails should be long enough to fully penetrate through the roof deck? I checked a slate quarry website and found the following installation spec: "All slate shall be fastened with two large head slaters' hard copper wire nails....of sufficient length to adequately penetrate the roof boarding." Without full penetration, the nails do not have complete "bite" into something, and risk getting pulled out.

TR: As a general rule, the length of the slate nails should be twice the thickness of the slate plus 1" (it is assumed that the roof sheathing will be approximately 1" thick). This will give the nail a 1" bite, which may or may not show through the underside of the roof

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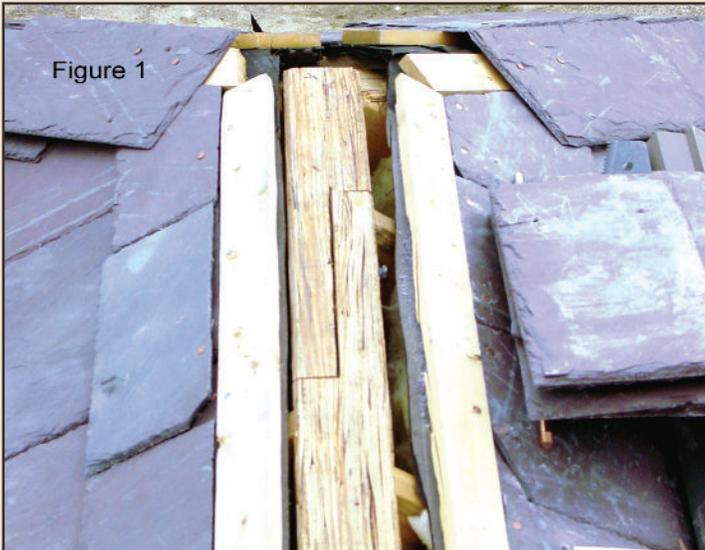


Figure 1

Furring strips are nailed to either side of the ridge opening to allow for nailing of both the plastic vent material and the ridge slates.



Plastic ridge vent available at any building supply store is rolled over the opening and nailed to the furring strips (above). A "saddle" slate ridge is installed over the vent material (below), leaving a low-profile.



For more info about installing saddle ridges refer to TR Issue #4 (traditionalroofing.com)

All Photos by Joe Jenkins

sheathing. A perfect scenario would have the nail bite through the wood 100% but not penetrate through to the inside.

On the other hand, nails that are too long and stick into the roof space, puncturing the back out of the roof deck boards, effectively decrease their holding potential by decreasing the thickness of the wood where the nail has penetrated (Figure 2, below). Therefore, it is important that the slating nails be neither too short, nor too long.

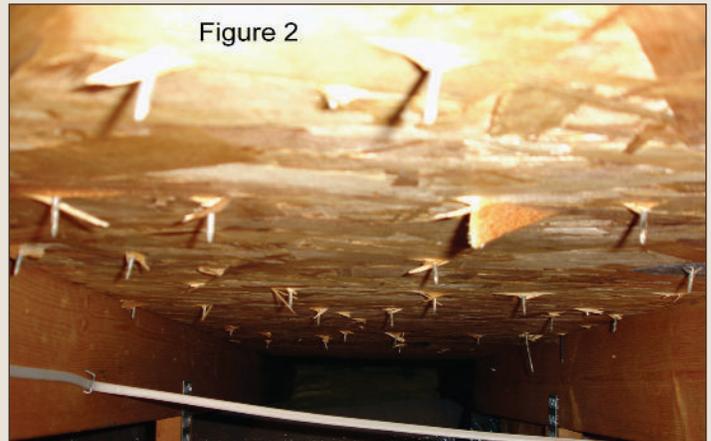


Figure 2

Nails that are too long break out the back of the roof sheathing and reduce the effective thickness of the wood, thereby reducing the holding power of the nail. The roof deck shown is OSB -- a decking material unsuitable for slate roofs due to lack of longevity.

Why is soldering with torches considered so poorly? Is it that it's often accompanied by poor workmanship, people are neurotic about fire, oxidation of materials when flame is directed towards the open seam, over use of heat annealing the copper, what?

TR: The problem with open flame torch soldering on roofs is not related to the sweating of the joint, the workmanship, copper annealing, etc. It is simply that the felt paper (or even the wood deck) under the metal being soldered will combust and smolder when subjected to the heat of an open flame torch — a problem not associated with soldering irons. The smoldering combustion may or may not be noticed by the roofer, who may receive a call at three o'clock in the morning that the building is filling with smoke. If the combustion is noticed by the roofer, he may frantically try to put it out, but realize that the smoldering material is underneath the copper and can't be reached. A lot of roofers find this out the hard way, and sometimes it's tragic. Open flame soldering on copper not attached directly to the roof surface, such as on gutters, is OK.

I am currently taking down a 100 year old slate roof in southeast Ireland. I wish to re-use the slate on a new project, however, someone has tarred the slate roof. Is there any solvent I can use to remove the tar from the slate, or can I sand it off? It seems like a terrible waste of such beautiful slate.

TR: Your options are limited. Other than trying to remove the tar with a solvent or by power washing (good luck) you can try flipping the slates over and using the back side out. You will probably have to hand trim the edges to reverse the bevel, which is a job in itself.

I have a persistent leak in my slate roof near the eaves. I had it repaired last year, but it still leaks in the same place. The previous roofer had removed the slates from the bottom 3' of the drip edge, installed peel and stick ice membrane, then reinstalled the slate. It continues to leak. What's going on?

TR: The problem was not a lack of ice membrane. Think about it — why would water be penetrating the slate in the first place? No water should get past the slate and flashings. If slate roofs routinely leaked, they would be failures as roofs and such roof systems

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would have been abandoned generations ago. It makes no sense to think that water will penetrate the slate and therefore what is *underneath* the slate is what really keeps the roof from leaking. When roofing contractors can't find a leak, they resort to desperate measures, such as removing slates and installing ice shield. But it's a waste of time and money.

You will find that your leak is being caused by a specific fault in the slate or flashings. That fault must be identified and repaired. It could be something as simple as a cracked slate, exposed nail head, or even a hidden leak, such as a too-close sidelap and a nail head too closely positioned underneath the lap joint (which would only leak during ice dam conditions or heavy rain, but can be repaired in minutes with a copper bib flashing).

[In this case the problem turned out to be faulty step flashings on a low dormer.] The roofers who looked at and "repaired" the roof probably didn't know how to replace step flashing on a slate roof. They certainly did not know how to diagnose the leak. Furthermore, if water is penetrating a slate roof at the eaves and there are no faults with the slate or flashings, then the headlap along the eaves could be too small. This is a problem that would have plagued the roof from the beginning, however. When eaves leak intermittently at one location, the problem is probably not headlap. For example, if there is a repair slate in the leaking region, say on a 20" slate roof, and they used an 18" slate for the repair, you would not be able to see that the slate is 2" too short and therefore has little or no headlap. That is a type of hidden leak. You need to find an experienced slater to find the problem with your roof. Don't waste your money on red herrings like the lack of peel and stick.

When installing a new slate roof, if you want to tighten up the roof along the eaves, increase the headlap along the bottom 36" of the roof (Figure 3). You can't rely on peel and stick underlayment (or any underlayment) for long term effectiveness on a slate roof because the stone roofing just lasts so much longer.

In my area there are many hardwood trees. We are in contact with a local sawyer to apply rough-sawn deck sheathing. What do you think is the most desirable wood and thickness to use as roof decking?

TR: I have often used hardwood sheathing for roof decking. However, the trick to using hardwoods in rough construction is to use them green (undried). Once they dry, they become very hard, so forget about nailing them without drilling holes for the nails. The most desirable thickness, in my opinion is 1", which also happens to be the most common thickness traditionally used on slate roofs. Any



Photo by Joe Jenkins

This VT unfading gray slate roof was installed with 4" headlap along the bottom three feet of the eaves (bottom 5 courses), while the remaining field slates have 3" headlap. The difference in exposure is not detectable by eye. This is the correct way to fortify the eaves on a slate roof when ice-damming is a concern. Underlayments do not work in the long run.

hardwood will work — tulip poplar, oak, cherry, ash, etc. Oak sheathing has a high longevity, but put it on green. You can air dry it somewhat to get rid of the wetness, but green — right off the stump — is OK too if the lumber is able to dry out in position. If not, air dry it first. My preferred roof sheathing right now is local hemlock or pine, also green, but we do air-dry the lumber when we can. A word of caution: you can *not* use green lumber in buildings that allow no way for the lumber to dry out in place (it will cause mold).

We are in the first phase of installing our Vermont slate roof. The slater is butting the slate at the hip and ridge and relying on the tar paper underneath the slate to prevent leakage. Should this not be flashed? Also, the valley has 2 foot copper sheets (one foot on either side of the lowest point of the valley) and the slate does not cover that much of the copper. Therefore, a lot of copper is showing — at least more than I think should be. Is there a rule of thumb on how much slate is brought over onto the copper flashing?

TR: Traditionally, slate was often installed without flashing on the saddle hips and ridges. Flashing does a better job, however, so we usually use it when installing slate hips or ridges. The procedure is shown at slateroofcentral.com. Your contract documents should detail the flashings that are used. Typically, on residences, valley exposure is 6" (six inches showing), sometimes 8" on larger roofs (assuming an open valley rather than a closed valley). The valley metal should go underneath the slate a minimum of 5" on each side. When you overlap more of the valley with the slate, you're just nailing holes through the metal, which is self-defeating.

I hope that this question is not the absolute dumbest one you have ever received but.... Is it possible to paint or stain old slate to more closely match some adjacent new slate that was installed after some storm damage? The older slate is in good condition and so the insurance company will not replace the undamaged tiles but there is a noticeable contrast in coloration.

TR: If the work had been done correctly, the slates used in the repair work would have been salvaged, not new. There is no way to now match the original slates in your situation other than to remove the new slates and replace them with salvaged slates. Painting or staining will only make matters worse.

We are installing a Buckingham 16" x random slate roof for a client in northern Maine. The rake slates are overhung 1 1/2" past the gable fascia. Could you give me your experienced opinion please?

TR: A 1" overhang on the gable ends is standard in the trade. 1.5" should be plenty.

I am planning on purchasing S1 VT weathering Gray 12x8 slate from [X] slate company. Are there any reasons that you are aware of that would cause you to recommend for or against this slate, this slate size, or this company?

TR: The slate size is very small and the installation will therefore be labor intensive. For a less labor-intensive installation, use larger slates. Make sure the slate is punched for nail holes, not drilled, and contains no iron-bearing inclusions that will leach rust down the roof after installation. You should order the slates with these provisions guaranteed, in writing. Also, see the article on nail holes in this issue on page 11.

I will be installing symmetrical valleys and I was planning on open valleys using valley flashing because it appears the most basic. What width flashing do you recommend? Do you recommend the V or W for an 8/12 roof where the two roof faces meet at a 90 degree angle?

TR: An open valley style is fine. You will need 5" of slate overlapping the valley metal, so if you're installing a 6" open valley, you can use 16" stock at that slope. We don't use V or W valleys unless there is a reason for it. We just use flat stock and force it into place to make

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a rounded valley bottom. That was the most common way to install a valley on traditional American slate roofs. “W” valleys are designed for use when two asymmetrical roof planes are draining into each other, or when a large roof plane is draining into a small one. “V” valleys fit nicely into a new roof, but won’t fit well into old roof valleys that have some sag to them. We use 20 ounce copper for valleys which you can buy at slateroofcentral.com. Pre-fabricated “V” and “W” valley stock in 16 ounce copper is also available there.

Do you recommend using metal drip edges and if so what size and material do you recommend?

TR: We rarely use metal drip edges on new slate roof installations. Metal drip edges became popular when asphalt shingles became widely used because such shingles can sag over the edge of the roof and must be supported. This is not an issue with slate, which is why traditional slate roofs rarely use metal drip edges. On the other hand, copper drip edges are becoming more popular on slate roofs for stylistic purposes as well as to protect fragile substrate edges when laminated roof decking is used. You can also form a cant into a copper drip edge, thereby eliminating the need for a wood cant strip (see Figure 6, page 3). Copper drip edges are available via slateroofcentral.com.

Can I staple the felt paper or do you recommend nails only in the pattern you describe in your book?

TR: You could staple it if you’re going to slate over it immediately. Otherwise it will blow off. It can also rip loose when you’re working on it if it’s just stapled.

What headlap do you recommend using on the roof over a porch that has a slope of 4/12 and a rake length of 9’6”? Will 4” be adequate?

TR: Four inches of headlap will work, although you need to make sure snow and ice will not be falling off an upper roof onto the porch and damaging the porch slates. Also, if a downspout drains onto the porch from an upper roof, it can create problems by draining too much water onto one spot.

It may take me a month to finish my roof. Do you recommend sealing over the nails holding the felt? If so, should I use roofing cement or silicon?

TR: If you seal the nails, use roofing cement — it’s a lot cheaper, it only has to work temporarily, and it can be applied thinly with a trowel so it will not interfere with the laying of the slate later. You may want to consider installing the felt half-lapped (i.e. two layers) for added protection. Then, you may not have to seal the nails if you’re only waiting 4 weeks. However, if you have a valuable interior, you should either seal the nails or slate the roof ASAP.

Do you recommend copper nails or stainless steel?

TR: Either/or. Depends on the roof deck. Copper nails are easier to get out later if you have to repair the roof. Stainless nails are easier to nail into harder roof decks. Both are available at slateroofcentral.com.

Can you recommend one slate hammer?

TR: Different hammers have different purposes. For example, German style slating, such as is shown on the turret in the article on page 7, requires the slates to be trimmed on the job site. Therefore, a slate hammer with a slate cutting shank is often preferred by Germans. Such a hammer has a lot of its weight in the shank (Gilbert and Becker, Stortz and GT make such hammers). When the hammer is being used to primarily beat on a slate ripper, pound nails, or punch holes in slate, such as during slate roof repairs or restoration, the weight of the hammer should be mostly in the head. The Estwing hammer is best used

for this purpose. If you are installing slate roofs and have a slate cutter and don’t need a hammer for trimming slate, use either a Stortz European roofing hammer or a similar Freund hammer. These have most of their weight in the head and are ideal for pounding nails and punching nail holes in slate, but are not as heavy as the Estwing hammer, so they won’t wear out your wrist if you’re pounding nails all day long. All of these tools are available at slateroofcentral.com.

Is it reasonable to think I can slate my roof using hook ladders, ladder jacks, and wooden ladders or do you recommend roofing jacks?

TR: You should use roof jacks. They’re safer and they make the job a lot easier.

Is the slate for the starter course usually sold separately or are the holes not already punched in these?

TR: You should order the starter slates separately and have the holes punched on the front (not back as is done for the field slates because the starter is laid front side down). The quarry should already know how to do this. They will also supply hip and ridge slates. See the article on starter slates in this issue, page 3. There was an article on hip and ridge slates in TR Issue #4. All articles are posted on the web at traditionalroofing.com after the print version has been circulated.

We are re-doing an asbestos tile roof and are in need of the copper tie-down hooks which are designed to prevent the wind from lifting the tiles. Do you carry this item or would you know a supplier?

TR: I know of no source (readers?) The copper clip used on asbestos roofs is shown in Figure 5.



To achieve credits for LEED we need to provide data for the solar reflectivity of slate (it’s ability to absorb and release heat). Do you know if such research has been done?

TR: We get this question more frequently, however, I know of no data available about this. The solar reflectivity of slate roofing would, I assume, vary according to the color of the slate. Some slate is dark, some lighter. However, on the whole I would think the reflectivity is quite low. My guess is that LEED is concerned about highly-reflective roofing types such as some metal roofing or even white single-ply or white asphalt shingles. I think with slate it’s a non-issue, but as I say, I do not have the hard data to back it up. Slate, being a stone, does absorb heat and releases it back out to the atmosphere as it cools. How this would negatively impact the environmental characteristics of a building, I do not know. If the roof is insulated, the heat does not penetrate into the building. Any of you readers have the answers?

I am currently reading your book, “The Slate Roof Bible.” The diagrams always show the starter course slates as having only one hole (which would make a lot of sense to me). Is this correct? If instead these starter course slates are just like all the other ones only turned sideways (with 2 holes), how do you keep the second hole near the eave from filling with water during ice backups in winter?

TR: All slates are nailed to the roof with two nails, including the starter slates. You don’t use the bottom hole if you’re turning a field slate sideways and using it for a starter slate. You punch a new hole in the correct location. It is important that the starter slate course be laid correctly to prevent stray holes from ending up where you don’t want them. See the article in this issue on page 3.

I know you do not recommend IWS and believe a 4” headlap will protect a slate roof from winter ice creep up under the slate roof. How does that work? It seems to me the ice as it melts creeps up the roof from underneath the slate, so the boards underneath get wet and over time must be replaced. Am I missing something?

TR: Yes. Obviously, if slate roofs allowed water to penetrate through them, they would be failures as roofs and would have been abandoned long ago. Slate roofs are watertight. The underlayment serves no long-

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term useful purpose after the slate has been correctly installed. Water does not creep through the slate and wet the boards underneath unless the slate has been improperly installed such as with inadequate headlap or is on an inadequate slope, or if the slate has holes or other faults, or if the slate along the eaves has been damaged by gutter installers or roofing contractors.

I'm installing a slate roof. Should I use copper nails or stainless steel screws to fasten the slate? My roofer says I should use screws.

TR: Please don't use screws. The beauty of slate roofs is that they can be taken apart and put back together over time, when needed, for repair and maintenance. Screws will make it impossible to take the roof apart because a slate ripper will not be able to pull them out.

Have questions, comments, rants or raves? Send us mail at Traditional Roofing, 143 Forest Lane, Grove City, PA 16127 USA, or email us at editor@traditionalroofing.com. ☒

sent I did not really want until next month, and only ordered them to help make the delivery costs from the mainland more practical. Now we will have to pay for two deliveries. Talk about being too smart for your own good.

At least the rain is easing. Hopefully, I'll be able to get out to finish that little bit of ornamental roofing at the Rectory in the afternoon.

I sort through a few more papers on the desk and throw two bundles of specifications and bills of quantities into the waste paper bin. They're from large national firms who are taking on work in the area. There's such a mass of paper work and documentation I'm supposed to read and understand that this puts me off for a start.

Neither is there any way that I could morally expect my own employees or my sub-contractors to leave a quality job at the price which these management firms will eventually accept. I briefly consider that I should give them a courtesy telephone call and apologize for being unable to tender, on the other hand they don't go wasting their time on courtesy calls to me.

It's now 12:15 and Angeline calls me from the house to remind me I have a provisional lunch arrangement with a technical rep. and friend from a local manufacturer. I call him up on his car phone and make contact after the third attempt. He is 60 miles away up country so we arrange another date. I had been looking forward to an interesting discussion on the pros and cons of some of his products, over the Chef's Special and a glass or two of the 'creatur' (for medicinal purposes of course) at Murphy's Cellars. However I am somewhat relieved since I have a suspicion that if we had kept this date, then the ornamental roof at the Rectory might tend to become another good intention unfulfilled today.

The phone goes off again. The electrical lady says that nobody has arrived yet. I assure her that Len left at 11 a.m. and should have been there.

After calling at the bathroom, I finish off the rest of my soggy cornflakes with a cup of coffee and four corned beef sandwiches. I am pulling on my boiler suit when the phone rings again and Len says he has got a flat wheel, looks like remains of a slate nail, could someone pick up his spare wheel from the local garage and bring it over.

I pick up my knee pads from the kitchen radiator where they have been quietly drying, give Angeline a peck on the cheek, pat the dogs, and as I walk towards the door, the sun breaks through the scudding clouds.

The phone goes off just as I step into the van, complete with the ladders and tools. I close the van door behind me and drive off to pick up Len's spare wheel and then on to 'Utopia,' the Rectory roof, where perhaps I will have a cold but enjoyable afternoon's therapeutic relaxation plying my trade as a roof slater and tiler. ☒

John Ball won the Gold Medal at the 2000 International Federation of Roofing Trades World Slating and Tiling Championships in Edinburgh, Scotland.

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