

Covey Consulting News

December 2010



“Damn these extra holiday flights. One more holding pattern and there goes my schedule”

Merry Christmas
to all of our readers



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Summertime – Pork Pies!

Yummy from Chairman Geoff

By now most readers will know that I am an ex-pat. I live in Australia & most of the time enjoy it very much, but I do really miss some things .

I can now buy English beer in some bottle shops (off-licences) even though I have to let it warm a little before I drink it (N.B. English beer is not drunk warm or iced, it is drunk cool!) or make it myself. However getting a good pork pie is much more difficult. A few shops sell some OK ones, but good ones are much harder to find. So recently I learned to make them myself & I will share the recipe with you. But first a few points about them.

Firstly, they MUST be eaten COLD, a fact doubted by many Australians. So far I have never seen them heat beer or lamingtons before they can eat them, but for some reason they seem to think that a pie must be hot – WRONG.

Secondly, some people find the idea of a pork pie off-putting. The recipe will work with chicken (but still eaten cold). My brother tends to throw away the meat & just eat the pastry & jelly!

Pork pies are wonderful for picnics or cold meals (e.g. on Boxing Day) or as a light meal anytime. If you are keen – & you will be when you have tried this recipe – several make a substantial meal!

The best pork pies are reckoned to be from Melton Mowbray, which is also one of the places where Stilton cheese is made. This is no coincidence. A by-product of making the cheese is a lot of milk whey, an ideal food for fattening up pigs & pork pies are a great way of using the pig flesh.

I used to think that Stilton Cheese & traditional pork pies were both very expensive. Then I saw a program on how they are made & I now wonder how they can sell them so cheaply.

Now turn to the back page for the recipe.

Welcome to new members of the Covey Team

CSIRO's loss will be to the benefit of the wider industry

Introducing yet another Convey Consulting Associate ...Nafty Vanderhoek

There is nothing like impending retirement to focus the mind on one's future – what to do going forward. That was the dilemma facing me when I realised some months ago that my current employment was about to come to an end. A number of possibilities immediately came to mind.

I could try to find another full-time position, but that did not look particularly appealing (or realistic at my age!) – having spent my total working life at two large organisations, one in private enterprise & the other a semi-government bureaucracy, the thought of yet another dysfunctional organisation, more battles with SAP, the endless completion of useless forms or having to listen to other people's problems for part of the day was not something that I wanted to face or do.

Alternatively, I could leave the work force altogether & spend more time with my two grand-daughters or doing recreational activities such as lowering my golf handicap, playing more bridge or even trying my hand at bowls. While initially an attractive alternative, the more I thought about it the less enthusiastic I became.

Having been mentally active all my working life, I didn't want to become a total bore; someone who could speak only about family or sport.

Finally, it came to me – why not have the best of both worlds; spend more time doing the fun things, but retain a professional interest by doing some consulting work. I know a number of people who have pursued this route, much to their satisfaction (even some at Covey Consulting). However, one of the must do's when joining this illustrious organisation is to introduce one-self through the Covey Newsletter – hence this article, albeit my reluctance to talk about myself.

Many of you no doubt know me. I worked at APM/Amtcor for 27 years (from 1974 to 2001) & the last 9 years at CSIRO in a variety of research & technical roles. I consider myself to have had a privileged working (& family) life; commencing in my home upbringing by my parents, through to high school where a final year class teacher initiated an interest in chemistry, onto university where I was fortunate to have an outstanding educator, Professor Don Stranks as my PhD supervisor, to my married life where my wife, Martha, has always encouraged me to strive for success, & finally over the last 36 years where many fine colleagues, supervisors & managers (too numerous to mention) have helped define my working career & the person who I am.



I have spent my entire professional life supporting the Australasian pulp & paper industry, & have been fortunate to have experienced a variety of roles in pulping, bleaching, papermaking, on-machine & off-machine processes, development, environment, project management & trial executions to name but a few. Most of the time I have had fun doing these tasks, but they have not totally absorbed my life. My outside interest includes sport (football & cricket in particular), bridge, walking, theatre & travel.

So that's it in a nutshell. If you consider this background to be of potential benefit to your organisation, feel free to pick up a phone to contact me – I would be only to willing to be of assistance (be it at a small price!)

Over the page:

To meet **Ross Werne**

In the next edition meet: **Jo-Ann Moore**

To subscribers of the Covey Consulting's **Radiata Bulletin**, our new look bulletin will be coming to you early in 2011.

We are sure that you will like the new presentation format designed to make it easier and quicker for you to navigate to priority information.

A gas solubility paradox

*Just because it is Christmas it does not mean that the Covey Team is not working hard to provide you with essential technical information. Appropriate to Christmas this information is about a paradox—but **Chairman Geoff** has also provided the solution.*

In an otherwise excellent & very useful paper on solubilities of gases in water (Yaws et al Chemical Engineering, June 1999 p102) the authors make some correct, but very misleading, comments about the dangers of high concentrations of sparingly soluble gases in air in contact with very low concentration solutions.

An example they give is that a mole fraction of 10^{-6} of propane in water will result in an equilibrium concentration of 3.5% propane in air at the interface which can be compared with the lower explosive limit of 2.1% & the threshold limit value (toxicity) of 2,500 ppm (0.025%).

A mole fraction of 10^{-6} of propane in water corresponds to a little less than 2.5 g/m³ so this is quite an alarming prospect - it also means that the less soluble the gas is, the higher the equilibrium concentration in the contacting air.

As an expert witness in quite a large number of cases, I have seen this same concern raised with respect to dangers of spills of low concentration solutions of hydrogen sulphide in situations in both the wood pulp & mineral processing industries. A carefully presented argument can look very worrying.

But there is a great paradox here. Look back a couple of paragraphs & you should spot it. The lower the solubility of the gas in water, the greater the concentration in the contacting air. The paradox is that with low solubility gases in solution, the equilibrium concentration in air may be high, but there is very little material in solution to saturate that air. Also, as gas goes out of solution, so the concentration in solution falls & the equilibrium concentration in air falls too (usually in direct proportion, or approximately so – Henry's Law).

Consider the case of 2.5 g/m³ propane in water mentioned above, & the effects of 1m³ in a tank, or as a spill. Looking at some numbers associated with this – there are a lot of variations that can be made to this analysis, but the principle & broad results remain the same.

Firstly, not all of the dissolved gas will come out of solution, & as the gas does come out of solution the equilibrium concentration in the air will fall. However, to err on the side of safety, suppose that half the dissolved propane comes out of

solution, but the equilibrium concentration remains unchanged.

For 1m³ of solution this means 1.25 g will be released (or 2.8×10^{-5} kgmoles). This is enough to bring just under 30L of air to the lower explosive limit - in most cases enough for a sizeable bang but not enough to do a lot of damage in its own right (collateral damage might be significant though). Looking at toxicity issues a bigger volume of air can be effected – a little less than 2.5 m³ brought to the threshold limit value. Again this would not normally be a problem as this is the limit of safe exposure for a human for some time. However, there could be more serious issues with toxicity – propane is relatively innocuous, if we were dealing with hydrogen sulphide a much bigger air volume could be affected.

So what does this all mean?

If we are dealing with the air space inside a tank containing contaminated water, then the explosive or toxic limit could easily be reached & extreme caution is required.

For a spill in a basement or poorly ventilated building there is again a lesser but still significant risk.

For a spill out of doors or in an even moderately well ventilated area, there is not likely to be any great danger unless the spill is a large one.

In the final analysis it is still important to be aware of the risk involved, but don't make the mistake of just looking at the alarming air concentration – make sure that the amount of gas in solution & the volume of air that could be affected is also considered.

Meet Ross Werne

Ross was born in Melbourne in the Olympic Year 1956 & has a Certificate of Applied Science (Lab Studies) from Swinburne.

He is married to Karen, has two daughters, Lauren & Jessica. Outside of work he is a keen indoor cricketer & has participated in a number of Australian & World Masters Games, (for the joy of competing, rather than any likelihood of success). When younger he played both baseball & cricket & still retains an interest in both sports.



In addition to sport Ross enjoys cars & has owned a number of “classic” cars over the years including a Datsun 2000 Fairlady & an original 1275 Mini Cooper S. These days he can often be seen driving top down in his MX5.

Ross spent his working life at CSIRO as part of the Forest Products Division & worked mainly as an analytical chemist on a variety of projects related to pulping, bleaching & wood & lignin chemistry. He has however been involved in lab scale pulping & bleaching, dissolving pulp manufacture, novel pulping methods, coating & lignin model compound synthesis.

His particular fields of expertise include:
Gas Chromatography—Mass Spectroscopy (GC-MS) including headspace GC-MS

Extractive analysis of wood, pulp & machine deposits

Determination of Lignin in wood, pulp & process streams

Dissolving pulp analysis, a-cellulose contents, viscosity etc.

Analysis of biomass pyrolysates for fuel & fine chemical production

Odour monitoring of industrial sites

Environmental analysis of water & biomass

TAPPI standards for pulp & paper

Geoff Covey Presents in Malaysia

If you are going to be near Malaysia in January, visit Penang on the 18th-20th January & hear our Chairman present the keynote address on:

'Fuels from Biomass'

at the 4th USM-JIRCAS International Symposium.

More details available from

www.ppti.usm.my/JIRCAS2011

4th USM-JIRCAS Joint International Symposium

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Christmas Crackers & Other Christmas Curios

Dennis Shore

Regular Readers of the Covey Consulting Newsletter will no doubt have been waiting with breathless anticipation to learn more about the various customs that go with our annual Christmas celebrations.

This year we will delve into the traditions associated with Christmas Crackers. In Australia & New Zealand it almost goes without saying that the festive dinner table will have on it Christmas crackers or bon-bons as they are also sometimes known. They will also be a feature on the dinner table in most counties that were once part of the British Empire.

A cracker consists of a cardboard tube wrapped in a brightly decorated twist of paper or foil. The cracker is pulled by two people & usually splits unevenly. The split is accompanied by a small bang produced by the effect of friction on a chemically impregnated card strip.

So the crackers name is somewhat self explanatory but why the alternate name of bon bons?

Well it is accepted that this novelty was invented by a certain Thomas J. Smith of London in 1847. So like many of our Christmas traditions (such as Christmas cards) crackers are a commercial innovation rather than steeped in religious significance.

Tom Smith created the crackers as a way of promoting the sale of his Bon-bon sweets, which he sold in a twist of paper (the origins of the traditional sweet-wrapper). The story goes that Tom Smith bought some French bon bons which at the time were sweets wrapped up in colourful papers during a trip to France just before Christmas in 1847.

He was already a successful confectioner back in London & thought these bon-bons would be a success back in the UK for Christmas.

Apparently however the Bon-bons were not the success he anticipated so his first tactic was to insert mottos into the wrappers of the sweets but this too met with only limited success.

The story goes that he was inspired to add the "crackle" element when he heard the crackle from a log he had just put on the fire. The size of the paper wrapper had to be increased to incorporate the banger mechanism, & eventually the sweet itself was dropped, to be replaced by a small gift.

The new product was initially marketed as the *Cosaque* (from Cossack) but the onomatopoeic "cracker" soon became the commonly used name.

The other elements of the modern cracker, the gifts, paper hats & varied designs, were all introduced by Tom Smith's son, Walter Smith, to differentiate his product from the many copycat cracker manufacturers which had suddenly sprung up.

As a name for a sweet, bon bon is rather generic & has been & is used to describe a wide variety of confectionary products. The term bon bon comes from the French & is actually simply a repetition of the word *good*. The bon bon to the French is a chocolate covered candy or truffle, often with a butter cream or fondant centre. These days bon bon refers to a whole range of confectionary, not necessarily covered with chocolate.

In the US, the bon bon is distinctly different. The bon bon is a frozen confection, consisting of vanilla ice cream dipped in chocolate and the word Bon-bon® is the trademarked name of this confection produced by the Hershey Company.

The word bon bon is also subject to numerous spellings in addition to several definitions. It is increasingly standard to see bonbon instead of "bon bon", although here in Australia the Cadbury Pascall Fruit Bon Bons use the original spelling.

Even though bonbon is a registered name, the use of bonbon elsewhere is so common it isn't necessary to include a trademark sign unless specifically referencing the Hershey product.

Perhaps to develop the American market the name cracker is now almost always used in describing the Christmas cracker.

So what is really known about Tom Smith? Well probably not a lot that is factual but Peter Kimpton in his book "Tom Smith's Christmas Crackers" reports that Tom was probably the son of a grocer, Thomas & his wife Pricilla & was born on October 18th 1823. Sadly Tom Jnr. had a fairly short life passing away on March 13th 1869 probably from stomach cancer.

It is known for certain that Tom Smith was from London & that he started in business on his own in the mid 1840's.

His origins in the confectionery business are reasonably easy to confirm but there are quite a few gaps, especially in the early years.

After Tom Smith's death, his three sons set about developing the cracker designs, contents & mottoes. Walter Smith, the youngest son, introduced a topical note to the mottoes which had previously been love verses.

Eventually these love verses or topical notes were replaced by more complicated puzzles & cartoons & finally by the corny jokes & riddles which typify our crackers today.

Walter also introduced paper hats, many of which were elaborate & made of the best quality tissue paper on proper hat makers stands. He also toured the world to find new & unusual ideas for surprise gifts & could be seen as the father of the Christmas trinket market.

Cracker aficionados will know that you can still buy Tom Smith Crackers. In fact they operate by appointment as suppliers to Her majesty Queen Elizabeth II & have been supplying the Royal Family since 1847, according to the image below. In fact it turns out that the Royal Warrant has been held only since 1906.



TOM SMITH

As with many institutions the original company has survived in name only. In 1953 the Tom Smith Company merged with Caley Crackers.

Further merges took place over the following years with Mead & Field, Neilson Festive Crackers & Manson & Church. The name however continued & Tom Smith Group became a subsidiary of Napier Industries, which in turn became a subsidiary of International Greetings in 2005.



The Tom Smith Cracker group is the largest manufacturer of crackers in the world. They still employ 150 people at Rickmansworth, in Herefordshire but in truth like most things these days most crackers are manufactured in China. If you want the real thing, be prepared to pay handsomely for the privilege.

What has also emerged is a trade in catalogues produced by the Tom Smith Company & as expensive as the genuine Tom Smith Crackers are, the genuine Catalogues from years gone by are the preferred gift at Christmas.



Another popular accoutrement to Christmas is the candy cane.

This custom does in fact go back somewhat before crackers. It started out about 400 years ago as a plain stick of white candy.

The first reference to candy sticks in relation to Christmas came in 1670. A choirmaster at the Cologne Cathedral in Germany gave the candy to the children that attended the church's nativity services so they would be quiet.

To make the candy go along with the spirit of the services he bent the candy into the shape of a shepherd's staff. So it was thus that the candy cane, as with many other things that we associate with Christmas, has been interpreted by some as symbolic of Christmas. Not only is the candy cane in the shape of a shepherd's staff and so relates to Jesus as the good shepherd, upside down the candy cane forms the letter "J", the first letter of Jesus' name and so on.

The first reference to the candy cane in America came coincidentally in the year that crackers invented - in 1847 when a German immigrant living in Ohio decorated his tree with the sweet treats. About 50 years later the first candy canes with red stripes appeared. Peppermint & wintergreen flavours were also added to the candy at this time making the candy cane the sweet Christmas favourite it is today.

So there you have it – the origin of crackers & candy canes, two of the table staples at Christmas.

From O Peregrino to El Peregrino (Part 1)

This records the recent peregrinations of St. Bruce (Allender)

The ostensible discovery of the Tomb of the Apostle Saint James (the Greater) at the beginning of the 9th century soon brought travellers to this site in the Galicia region of north-western Spain, which is today the city of Santiago de Compostela. How the gent's bones happened to be there & discovered is a little fuzzy. But what is known is that St James preached in Galicia, returned to the Holy Land & was martyred in 44 CE. Tradition says his disciples then shipped the corpse back to Spain – but a little more on that later.

The result of this discovery was vast numbers of pilgrims walking (or being carried if you were rich & or royal enough) to SdeC. And the motivation? From the 11th century, spiritual indulgences were granted for those completing the journey, one being a 50% remission of your collective sins on judgement day. So over the next 2 centuries this was a very popular trip. There has been another surge of interest since the 20th century, driven by spiritual needs, cultural traditions, & just curiosity (tourists).

The Camino de Santiago is actually a network of routes to SdeC from just about anywhere in Europe.

As with many systems (& beliefs), they are built on what went before. Many of the Camino routes follow the Roman highways built earlier to service the needs of the empire to the edge of the world, Cape Finisterre (as the west coast of Spain was then believed to be). And even further back, the Camino route(s) are supposed to follow the earth spiritual energy ley lines beloved of New Ageists (e.g. The Camino – A Journey of the Spirit, by Shirley MacLaine).



While it all looks doable on a map the reality of walking hundreds & hundreds of kilometres on the ground along poorly marked (if at all) routes is a different proposition. How or why a "peregrino" actually does the journey lies within their soul. Why walk when you could ride, drive, train, bus or fly? The minimum requirement to get a certificate of completion at the Cathedral in SdeC is proof one has walked the last 100 km or ridden the last 200 km (bicycle or horseback).

The proof is your *Credencial del Peregrino* or pilgrim's passport, which has to be stamped by the establishments you pass on the way. I say establishments because that too can be a bit of fiddle. 100 km from SdeC we started encountering groups of walkers with no visible means of support stopped for refreshments at roadside café's. These are mostly locals meeting their spiritual &/ or cultural obligations to the family by completing the Camino. So off they go of a weekend (dropped of by say Uncle Jose), & walk through a village or two getting café stamps along the way. Then back again another weekend to do another stage until completion.

A slightly higher degree of difficulty involves walking longer distances for longer, but with a back up van carrying all luggage to the next hotel, accommodation & refreshments pre-booked. 5

From O Peregrino to El Peregrino - Ctd.

The vast number of pilgrims over the centuries has necessitated a large support network driven by a variety of commercial imperatives. Originally this meant monasteries, chapels & cathedrals for the devout, plus places to sleep, eat & drink for their bodily needs. Nowadays these needs are met across of spectrum of 5 star hotels, resorts & bed & breakfasts, through to basic pilgrim hostels (bunk mattress, shower & toilet). And all the cafés & restaurants you want along the way.

OK, so now you know this is a serious endeavour, but buoyed by the knowledge that many thousands if not millions of pilgrims have gone before you, most facing far tougher conditions than you will ever experience (& sans gortex, polar fleece, vibram soles, hi-tech packs), surely it can't be that hard. Well actually it is – if you are serious about walking it alone.

It comes back again to why do the Camino de Santiago, & that is a very individual decision. For me, I was looking for personal clarity through spending time in a basic & simplified environment. That is walking, carrying all my possessions on my back for a prolonged period through an unknown countryside, with only a beginning & end planned.

Of course serious hikers do this all the time, & carry their food & tents – so no big deal. And not so simplified that a roadside café con leche was ever a temptation I could actually pass up. I guess what made this special for me was the humanity. Just thinking & walking in the same footsteps of so many other people (past & present), all seeking their own personal goals, but in some way the same goal.

So where to start? The classic & road most travelled is the Camino Francés – across the top of Spain starting near the Pyrenees. Distance up to 700 km, estimated time 4 weeks at 25km per day. They say that in peak summer, a thousand pilgrims per day will pass through each village. A few issues here: travel in summer & it will be crowded (accommodation etc), hot, dry & uncomfortable; do you want to/can you handle 4 weeks; & it is the bog standard route. But there are several other routes through Spain to SdeC, albeit less travelled & with less pilgrim infrastructure.

One of these is the Camino Portugués, that starts in Lisbon & heads due north to SdeC. Still a 2-week trek, but fortunately an acceptable pilgrim start is at Oporto, only 250km from the end & taking just 10 days.

Carrying a pack for 5-6 hours per day, day on day isn't easy from a standing start, & many pilgrims underestimate the weight of

their packs & overestimate their ability.

From the wave that travelled with me, only about 50% made the walk straight through without taking a day of rest, or catching a bus or train partway. So get in some practise at home. Sure it helped me, but it was still much harder than I expected. Your most precious body parts become your feet - to clean, massage, ointment, bandage & pamper every day. But the pain turned out to be part of the process too.

Hard core pilgrims do without the modern trappings of cell phone, laptop, iPod, even a wristwatch, travelling just to rhythm of nature. Life is about compromise, so I wore a watch.

Another aspect is how you travel – alone, with partner, friends or group. I suspect the purist travels solo, since this is classically a journey of reflection and spiritual awareness. Certainly the dynamics change for those travelling with a companion(s) – & a number of relationships came under pressure at various times. Living so close to people all day every day without modern worldly distractions is interesting.

So after making all necessary compromises, I purchased a pilgrim guidebook, a fist full of Euros, tickets to Oporto and from Santiago, & left for the northern hemisphere spring to avoid the crowds. In Oporto I became “o peregrino” with the purchase of my Credencial from the local Cathedral.



After a day sampling the local delicacies (and yes there is a McDonalds) – primarily various port wines (as you do in Oporto), it was time for an early start – with a train ride. I could have walked through the endless suburbs, but naturally took the guide's advice and started at an outer suburban church. The guidebook went into meticulous detail about what road to take, turn, stop and look at etc. In reality this meant reading the book full time and not the surroundings. The pouring rain was a further difficulty. Anyway I promptly got lost.

So semi-rural Portugal, no English (signs or speaking), fading light, rain, & miles from the next hostel (wherever that was). What the hell was I doing here? The locals make little sense of my guidebook, but they all pointed in roughly the same northwards

direction.

By some miracle I eventually hit a town on my map. Not an epiphany, but the next one was. I then notice there were small yellow arrows spray-painted on the odd fence, lamppost & occasionally the kerbing. And then it hit me – these are the pilgrim way marks – not the fancy ceramic tiles shown in the guidebook, but just basic arrows. So to badly paraphrase a long forgotten Sunday School Class, I was lost & then I was found. So thereafter, whenever I felt lost or downhearted, to lift my head & find the next arrow in front of me was inspirational.



I made the decision to try out as a real peregrino & stay at the pilgrim hostels run by the local municipalities. Basic, but very well maintained & clean. Often with self serve kitchens, but hit or miss (mostly miss) on blankets & pillows. Earlier research, reinforced by my new travelling companions, said that bedbugs could be an issue, but at least I had an impregnated liner (note to self – bring a sleeping bag next time. With no blankets, sleeping fully clothed is not enough).

The next day is mostly dry, is followed by two days of rain & by this time I am starting to see the same faces at the hostel each evening. Some buy fixings at the local general store, others find a restaurant. I am with the latter, mostly because of the language barriers. Many of the pilgrims can speak some English, but I have the antipodeans' curse of being unable to speak no other European language. But we find common ground comparing pains, blisters, & brands of tapes & medications.

The pain is also part of journey. The old hands (& there were a remarkable number of repeat offenders) say it takes 5 or more days on the road to get into the zone – your mind was simplified, clear & just goes with the flow. What the pain does is focus the mind – it is all about you. How far do I have to go today, will I make it, when should I rest, am I getting any closer, how close, where will I stay tonight?

We are still in poor, sweet Portugal, but soon to enter Spain, & become el peregrino.

To be continued.....



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Covey Consulting has a close working relationship with a network of associates who can provide specialist knowledge outside our direct area of expertise. These include Civil and Structural Engineers, Chemical Analytical Laboratories and Technical Information Services. Covey Consulting regularly uses the scientific resources and equipment located at the universities of Melbourne, Monash and RMIT as well



Covey Consulting can join all the parts of your project for you

Pork Pie Recipe



Traditionally, the pastry for the pies is hand moulded round a form, wrapped in grease-proof paper, filled and baked. However this way is very fiddly and there is a good chance of a poor result. Instead a very satisfactory result can be obtained using a deep muffin tin, or if you prefer to make a large pie, using a clip-side cake tin. If using a muffin tin, the holes should be about 7-8 cm diameter and 3cm deep.

The following recipe will make a dozen pies (exactly the number of holes in a muffin tin!).

For the filling:

- 700g shoulder pork (other cuts can be used – you want a balance that contains some, but not excessive amounts of fat).
 - 220g rindless bacon – most recipes specify green (i.e. un-smoked) but I find smoked bacon to be as good.
 - ½ tablespoon of chopped fresh sage, or half this quantity of dried sage.
 - 1 teaspoon anchovy essence – this is not essential, those who don't like the idea can omit it, but it does add to the flavour. If you cannot buy this, a few anchovy fillets macerated in a blender or mortar and pestle will do
 - ½ teaspoon mace – nutmeg is an acceptable substitute.
 - ½ teaspoon allspice.
- Salt and pepper to taste.

For the pastry:

This is very easy and simple to make. You can substitute frozen short-crust or flaky pastry but the end result is really not nearly as good.

- 4 ½ cups plain flour.
- 1 ½ teaspoons salt.
- 180 g lard – you can substitute butter, margarine or vegetable shortening, but the pastry won't taste quite the same
- 375 ml water
- 1-2 egg yolks

For the jelly:

This is not essential, but fills any gaps in the pie filling. It is part of the traditional way of making a pork pie. If you are really keen, you can start with pig's trotters and pork bones, but that is beyond the scope of this recipe.

- 1 cup pork or chicken stock
- 1 tablespoon gelatine
- Salt and pepper

Preparation:

The pork and bacon should be very finely chopped, but not minced. Can be done with a sharp knife (tedious) or in a food processor by using the pulse button until the desired result is obtained. If you have an electric mincer with a coarse set of dies this will probably do the job too.

Then just mix the filling ingredients together.

Then make the pastry. Unlike many other types of pastry, the important thing is to keep the mixture warm.

Sift the flour and salt into a bowl. Cut the lard into small pieces and add it to the water in a pan and bring it to the boil. Quickly pour the lard and water into the flour and mix with a food mixer for 15-20 seconds, or with a wooden spoon. Add the egg yolk(s) and mix again until the mixture becomes cohesive and leaves the sides of the bowl clean. Turn the mixture out onto a sheet of greaseproof paper, knead lightly until a ball is formed, then wrap in the greaseproof paper and set aside to rest for 20-30 minutes.

Then take the rested dough and separate 2/3 of it off. Divide this into twelve equal parts and roll each one into a ball, lace it in a muffin tin hole and mould it to line the hole and overlap the top a little. Add pork mixture to each pastry-filled hole. Roll out the remaining 1/3 of the pastry, cut it to form lids and place these on each pie a little water or egg yolk round the top will help the lids to stick). Glaze the pie tops with egg yolk and make a steam hole in each one. Ideally make a larger hole as well and cover it with a pastry decoration.

Put the muffin tray on a shallow baking tray and bake in a 180°C oven for 30 minutes. Then remove from oven, carefully remove the pies from the muffin tin and place them directly on the baking tray. Return to the oven for a further 20-25 minutes or until the pastry is crispy, then cool on a wire rack.

You don't have to add the jelly, but here is how. Put 3 tablespoons of stock into a saucepan and sprinkle in the gelatine. Allow to stand for a few minutes, then heat to dissolve the gelatine and stir in the rest of the stock and the salt and pepper. Remove from heat and cool slightly. Prise the pastry decorations off the tops of the pies and pour the jelly into through the holes (a small funnel makes it easier). Replace the decoration (the jelly will stick it back). Refrigerate and then enjoy.

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