

Index:

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Page 2	Index	
Page 3	The LNB	
Page 6	Talking teletext	
Page 7	Go figure	
Page 11	Multiple satellite reception on a fixed dish (part two)	by
Page 15r. . . .	The Frobnicate Quiz	Ewen Cathcart
Page 16	Espoir (a short story in French)	
Page 17	Winter in La Belle France Profonde	by Stephanie-Jane
Page 19	The Knitting Machine	Murray
Page 20	The Wrap Party	

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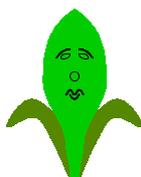
"Winter in la belle France profonde" written by Stephanie-Jane Murray.

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The LNB

Something that is very important in terms of satellite reception is the “LNB”. It’s that lumpy thing that sticks out of the front of your dish.

But have you ever stopped to consider just exactly what it *does*?

It is a commonly used (but incorrect) analogy that receiving a satellite reception is akin to trying to see a 60W bulb some 20,000 miles away. The analogy is incorrect as radio waves behave very differently at different frequencies. A kilowatt TV transmitter (roughly in the range 400 – 800MHz) would be really struggling to broadcast a signal 200 miles, never mind 100× further!

What is true, however, is that the signal is pitifully weak. That’s what the dish is for. It acts as a kind of mirror to reflect the most possible signal into the area of “prime focus” where the LNB sits.

You’ll have seen this principle in reverse. Look in the front of any torch and you’ll see a rather imprecise parabolic mirror designed to reflect *all* of the bulb’s light forwards. Well, a dish is just like that, only in reverse.

What must also be considered is that the satellite transmissions work at really high frequencies – in the order of 10.7GHz to 12.75GHz. That’s *gigahertz*. Your microwave oven and your PC are probably both clocking in the region of 2 to 3GHz.

However the same laws of physics that prevent us from having 10GHz Pentiums also prevent us from sending 10GHz down a length of wire. So one of the jobs of the LNB is to convert these high frequencies into something more manageable. Something in the range of 950MHz to 1950MHz (low band) and 1100MHz to 2150MHz (high band). This *can* be sent down a good wire. And this can be handled by a satellite receiver.

The LNB is actually a “downconverter” (it converts the frequencies down), but the name actually stands for “Low Noise Block”. It is an “active” component,



as opposed to a TV antenna which is passive. Not only does it alter the frequencies, but by using a polarisation technique, it selects what exactly you wish to receive.

In essence, the basic principle of satellite transmission is the same as for regular TV. There is nothing unusual about this part of the electromagnetic spectrum. In either case, the reception of the electric field that is being broadcast is achieved with the use of an antenna. With normal TV and DTT you have a wiry lump, ranging from a set-top gizmo maybe 20cm long to a big mass affixed to your chimney and measuring a metre and a half in length. In the case of satellite reception, you have two small antennae – one for vertical reception and one for horizontal reception. Both are in the order of several millimetres in length. It’s the wavelength, a bigger antenna wouldn’t give any useful gain. This, by the way, explains how mesh dishes work. If the holes are closer together than the wavelength, then the dish will appear ‘solid’ in radio terms. I don’t fully understand it either, but it works!

The signal from the satellite is considerably weaker than the feeble transmissions. In technical terms, it probably loses in the order of 200dB passing through the atmosphere. More, if – like me – your dish is sited with obstacles like trees in the way (which is why my Digibox frequency says “No signal!”).

In order to enhance the reception, the dish comes into play. It ‘collects’ the signal over a wide area (usually 60cm, 80cm, or 90cm) and focuses it all on a fixed point. Yup, we’re back to the prime focus. So now instead of pointing the LNB at the satellite and collecting a pathetically weak signal through the LNB cap, we can position the LNB at the prime focus of the dish and reap the benefits of over half a metre of collecting area. 1cm LNB cap versus 60cm of dish. It’s a no brainer really!

In terrestrial transmission, the signals are usually horizontally polarised. Your antenna is usually horizontal rather than vertical (although often vertical polarisation is used with signals broadcast from lower-powered relay transmitters). The difference between terrestrial channels is sufficiently large that there is no cross-channel interference (we aren't counting different countries and weather-related interference).

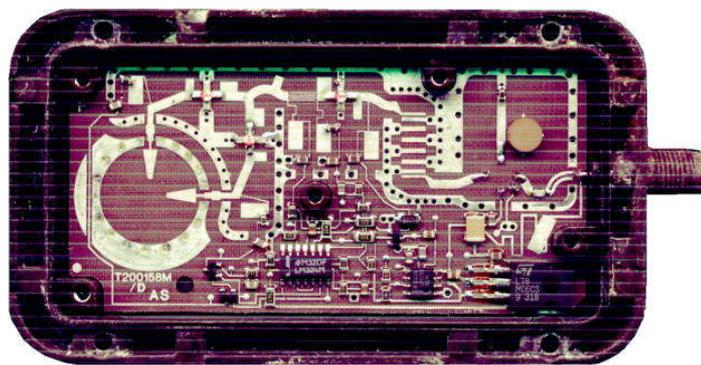
One of the other problems with satellite reception is that there are now more channels to be received than can be successfully downconverted and pushed down the wire to the receiver. The way around this problem is simple and elegant – the LNB is actually *two* units in one:

The low frequency local oscillator. This operates at 9.75GHz and allows reception of frequencies between 10.7GHz and 11.7GHz. The signal is downconverted to a signal between 950MHz and 1950MHz.

The high frequency local oscillator. This operates at 10.6GHz and allows reception of frequencies between 11.7GHz and 12.75GHz. The signal is downconverted to a signal between 1100MHz and 2150MHz.

Selection of which local oscillator to use is by way of a 22kHz tone inserted into the LNB cable. This allows complete coverage of the gamut of frequencies that are broadcast.

It is essential that the two oscillators are extremely stable – this is one of the things that accounts for the price of LNBs. As you may know, the responses of electrical circuits are affected by temperature. The LNB is exposed to the more arduous of conditions. Not only does it contain tuned parts that must be reliable, but it must also operate correctly within a wide range of frequencies, in the order of -30°C to +70°C (if you think that +70 is unlikely, think how hot the device will become after spending an afternoon in the baking summer sun, with the dish helping to concentrate the sun towards the LNB). If you live in a dry and sunny location and you experience one of more channels disappearing during the afternoon, it is because the local oscillator is wandering due to temperature variations. The answer is simple, go and get yourself a better quality LNB!



The picture above is from an old single-band LNB from the early days of Sky television. *NEVER OPEN UP AN LNB THAT YOU WISH TO USE*, treat them like harddiscs – keep 'em sealed!

The “antenna” is the part on the left. The feed horn concentrates the signal to the two arrows. One arrow is for horizontal, the other for vertical. Exactly how it works is a careful blend of science and magic.

The price of LNBs can vary amazingly. My current LNB is a Comag part that cost only a few pounds (with many thanks to Ewen). It appears to be small and reliable, though I wonder if the low price means it may not be quite as reliable at temperature extremes? I certainly hope I don't have to experience a -30 in order to find out!

Three different things are present on the wire between the LNB and the receiver. The most obvious is the satellite signal itself. The signal captured is very weak, and the signal output from the LNB is not terribly strong either, a little over 3mV (in the order of 70dBµV). There is noise inherent in the LNB itself, and this noise is measured in dB (decibels). A good LNB will figure 0.6dB or less. The higher the figure, the worse it is.

The second thing on the wire is the power to the LNB. This is either 13V DC (to select vertical polarisation) or 18V DC (for horizontal). Finally, there may be a tone of 22kHz used to instruct the LNB to operate in the higher frequency range.

You might be asking “where is DiSEqC?”. DiSEqC is implemented by pulse modulation of the 22kHz tone. The modulations are fast, and they only occur when messages are to be sent to the DiSEqC equipment (switches, etc – refer to Ewen's article on page ##), so disturbances to the operation of the LNB should be minimal. Some, such as “Monoblocks” use DiSEqC themselves...

It used to be that budget LNBs worked well with analogue (a dish can be many millidegrees off-signal and you wouldn't see it on an analogue signal!) but behaving badly with digital signals. The noise must be low, the sensitivity high, and even across the range of frequencies to be received. While I have not been able to experience this budget LNB in operation at the extremes, it is operating in less than favourable conditions, and it operates every bit as well as a more expensive LNB (the one pictured on the previous page), and I actually feel that due to the lower noise (the LNB pictured is 0.8dB, the Comag is 0.6dB), I actually think that the budget LNB provides *improved* reception. Those who have seen my website will know that my dish looks through some willow trees (I have little scope for dish placement), so – as the *Tesco*TM advert says:

Every little helps..

Not only is your LNB sensitive to changes in temperature *and* how accurately it is positioned with respect to the satellite, it is also sensitive to humidity. And, again, I point out that the LNB ‘lives outside’. Most people would not leave delicate electronic devices outside if it is likely to be anything other than bright sunshine. Well, the LNB is a delicate thing, and we expect it to perform always. You don't want to settle down to watch a film starring *Renée Zellueger* to find that your LNB is dead. You just want to watch the film and enjoy yourself, whether it is sunny, moony, freezing fog, snowfall, drizzle, or the torrential rains of an ex-Atlantic hurricane. The LNB, perched on a stick protruding from your dish, is expected to cope with it all.

Give it a helping hand! Those little screw-up connectors (‘F type’) should be attached firmly. A loose connection could cause a short, which will damage some types of receiver. The F type plug *absolutely must* match the diameter of your satellite cabling. If you are thinking of wrapping some tin-foil around the outside of the wire to make up the difference, *don't!* There are *so* many reasons why



this is a Bad Idea, I'm not going to write them down. It's an exercise for you, the reader.

The LNB pictured on the left. That's the budget Comag LNB. A cute little thing. Do you see below it the dark grey plastic thing? This is a rubber ‘boot’ which clicks into place around the LNB. It must be fitted, your cable must lie snugly and nothing be loose. *This* is what keeps the damp out of your LNB. If you purchased your equipment as parts, ensure that you purchase some sort of protector. You can obtain slide-in things, or clip-on things. I guess as a last resort you could even carefully apply a thick coat of ‘Mastic’ sealant around the connection, though this may make it difficult to unscrew the connection should you ever need to readjust your dish!

Finally, check your LNB if reception becomes erratic. The fluctuations in temperature and the UV from the sun can take their toll on LNBs which have caps over a metal horn (moulded plastic LNBs and those with fibreglass-like caps fare much better). Remember, during the equinox the sun will follow the path of the Clarke Belt, so at the exact right time (around 10am - 12pm depending on satellite and time zone) the sun will be directly ‘behind’ the satellites that you wish to receive. The dish will concentrate all of the sun's energy into the LNB. Like I said, they have to perform in arduous conditions!

One thing that I do not understand is how companies such as Comag can produce delicate equipment at such a low price. A digital satellite receiver for £30 is astonishing, and an LNB for a tenth of that is bordering on the unbelievable. But there it is, sitting on the end of my dish. Working. Allowing me to watch the amazing *Shrek* (-again; *Toy Story* seems cartoony in comparison).

While the price of the equipment seems to be lower and lower each season (though I think this LNB couldn't get much cheaper!), I hope I have given you an insight into how it operates and the conditions that it operates in. It is all too simple to just install it and forget about it. Well, the next time you switch on your TV to watch *The Champions* or *Alien Nation*, spare a little thought for your LNB...

Talking teletext

In the last issue I left you with the question:
how do you know when a page has been received?

I suggested that you poke around row 25, column 8. This is where you will find the !FOUND flag, however a long-standing quirk in *Teletext for DOS* means that it actually reads the PBLF flag in column 9. This means *Page Being Looked For* – and in our implementation operates as a “found” flag. If the page is being looked for, PBLF is set (it is being looked for). When the page is received, both go logical low (no longer looking, page found). How to read the PBLF flag? Just like this...

```
int frame_found(void)
{
    int flag = 0;

    // Tell EuroCCT: chap 0, row 25, col 9
    iicbuf[0] = 8;
    iicbuf[1] = 0;
    iicbuf[2] = 25;
    iicbuf[3] = 9;
    iic_writebytes(EUROCCT_WRITE, 4);

    // Set up for read back
    iicbuf[0] = 11;
    iic_writebytes(EUROCCT_WRITE, 1);

    // Read it
    iic_readbytes(EUROCCT_READ, 1);
    flag = iicbuf[0];

    // Mask it
    flag = ((flag >> 5) & 1);

    // Flag is low when page found, so invert it
    flag ^= 1;

    // If page found, we can say we are not
    // still looking for a page...
    if (flag)
        searching = FALSE;

    return flag;
}
```

The alternative, using the !FOUND flag, would be to read from:

```
iicbuf[2] = 25;
iicbuf[3] = 8;
```

and mask it with:

```
flag = ((flag >> 5) & 1);
```

This system works because the software (*Teletext for DOS* and *WirITX*) physically request the page to be searched for again. If you *do not* go this, the following behaviour must be noted:

The PBLF goes high as soon as a page request is entered into EuroCCT. The PBLF flag goes low when the page is received. *The PBLF will stay low for all subsequent auto-updates of that page.*

The way around this? EuroCCT will clear !FOUND as soon as a page is received, but it will not set it upon a new page being looked for. So what you should do is insert a routine that will *set* the !FOUND flag just after a page is downloaded into the computer. The EuroCCT will clear this flag, even if the PBLF is untouched.

So you can either do as I do and choose to re-request the page, and use the PBLF bit; or you can let the EuroCCT handle updates for you, by setting the !FOUND flag and checking it.

My preference probably deserves the name “quirk”, but I prefer to always be “in control”, so the software always knows what the receiver is expected to doing.

Bits eight and nine of row 25 are:

Col.	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
8	0	0	0	!FOUND	0	MAG2	MAG1	MAG0
9	0	0	PBLF	0	0	0	0	0

Following columns zero to nine, there are fourteen bytes remaining to make up the 1024 in chapter zero. These bytes are unused and untouched by EuroCCT, their intended purpose is a small amount of memory which may be utilised by a microprocessor in a system where a dedicated CPU is looking after the EuroCCT’s operation – perhaps this may be useful to you?

Well, that brings our series to an end. I hope you enjoyed *Talking teletext*.

:) Go figure! (:

a ramble around Rick's mind...

I begin this article with a name. *Charles Kennedy*. I was dismayed to see the apparent reaction of his party and the “back-stabbing” that went on. Mom told a slightly different story, having heard a more in-depth analysis on Radio Four. This suggested that the problem had been brewing for quite a while and the LibDems had finally decided enough was enough. Unfortunately, one might justifiably criticise their technique of ousting him – I’ve seen some quotes that are best summed up with these two:

If this is all the consideration that they show for their party leader, how can they possibly expect us (voters) to believe that they'll “be there for us”?

and:

It is sad that a respectable party has been reduced to anarchy and what amounts to a coup. This is not democracy.

Please do not mistake what I am getting at here. I am *not* saying that Mr. Kennedy was the greatest man for the job. I’m not even going to discuss his problem with alcohol. The fact is that it appeared to come across as a rather vicious attack on the man that is supposed to be their leader. Highly disrespectful, if little else.

The problem, as I see it, is that if such drastic steps are necessary, there is evidently no other method of deposing their leader without his consent. Perhaps this is where the problem lies? And in facing this problem, they have – perhaps unwittingly – done themselves damage.

But it is not a great damage. It is almost a sad irony reading text services and watching news programmes. Mr. Kennedy is old news. Gone. Who cares. The big question now (as I type this, perhaps forgotten by the time that you read this) is “why does the guy called *men-zees* pronounce it at *ming-us*?”. Perhaps it is a Scottish thing.

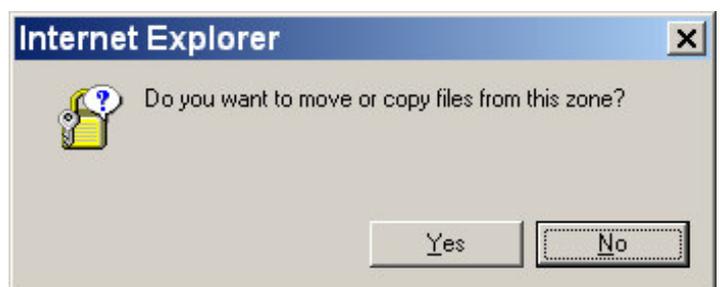
Just in case you didn’t know, my name is *Murray* but you pronounce it *quack* Mmmm, maybe not.

It is usual that I write something political into each issue. After all, as I’m writing this, it’s my soapbox. If you disagree or think I’ve missed something, feel free to submit an article of your own! Anyway, apart from Mr. Sharron’s health problems, nothing much has changed. Nothing to talk about.

Political Correctness has gone over the top. How *dare* a Christian religious person (in England) make the suggestion that England is a Christian country and that people from other countries and faiths should respect that. Exactly what is “PC” achieving? It takes a nominated “minority” and over-zealously defends them to the detriment of *everybody*. We should, when in *any* country, respect their ways of life, their traditions, and their culture. Even if it is in conflict with our own ideas, we should go along with it because we are the *visitor* (or non-native).

There are certain countries where visiting females are *expected* to wear the full-cover gown-thing. We are expected to respect their culture and beliefs, *which is how it should be*. Is it really such a terrible imposition ask the same consideration in return?

Just to put a smile upon your face, I present you with this error message. There is an obvious lesson to be learned here...



This is something (else) that the Windows API could have done better. My documentation covers up to the Server2003 edition, and the handling of *MsgBox*'s buttons is as follows:

To indicate the buttons displayed in the message box, specify one of the following values.

MB_ABORTRETRYIGNORE

The message box contains three push buttons: Abort, Retry, and Ignore.

MB_CANCELTRYCONTINUE

Microsoft Windows 2000/XP: The message box contains three push buttons: Cancel, Try Again, Continue. Use this message box type instead of MB_ABORTRETRYIGNORE.

MB_HELP

Windows 95/98/Me, Windows NT 4.0 and later: Adds a Help button to the message box. When the user clicks the Help button or presses F1, the system sends a WM_HELP message to the owner.

MB_OK

The message box contains one push button: OK. This is the default.

MB_OKCANCEL

The message box contains two push buttons: OK and Cancel.

MB_RETRYCANCEL

The message box contains two push buttons: Retry and Cancel.

MB_YESNO

The message box contains two push buttons: Yes and No.

MB_YESNOCANCEL

The message box contains three push buttons: Yes, No, and Cancel.

In addition, by calling *MessageBoxIndirect*, you can specify a custom icon to display with your message, which is probably how the one on the previous page was created.

So what's missing? Something so elegantly simple it is amazing that it wasn't thought of in Windows 3! The ability to write custom text into each button!

The *MessageBoxIndirect* function lets you give a pointer to an icon which will be displayed. So why not also:

- block + 0 Number of buttons (1-4)
- block + 4 Text for button 1 (12 chars)
- block + 16 Text for button 2
- block + 28 Text for button 3
- block + 40 Text for button 4

And, when clicked, the message box can return 1, 2, 3, or 4. So now, without having to create custom modal message boxes of your own or whatever, you simply call the normal message box function and it will ask you:

Do you want to move or copy files from this zone?
Move *Copy*

Instead of:

Do you want to move or copy files from this zone?
Yes *No*

which is meaningless!

Never one to miss an opportunity to plug *OvationPro*, I'd like to take a moment to show off some frame shapes. Because plain boxes are boring and very '80s. We're two decades beyond this, so it is time to spread

boxes are boring!

our wings and fly! The ellipse shown on the right (note also how the text flows around it) can help to jazz things up without too much effort, but true style will be when you realise that you may use lines and bézier curves to create a frame of any sort of shape that you can imagine. It remains to be seen quite what the PDF version will look like... :-)

ellipses are more interesting!

and, of course, text can be flowed *inside* the shape; note also how this text is justified to the shape boundary, with a 0mm inset.

Of course, you'd be right to say that packages such as *Quark* can do all manner of fancy stuff. Well, can I install *Quark* on my Windows 98SE machine in around 10Mb of harddisc space? Would I be able to buy a (legal) copy of that software for £100 (plus a further £150 if a site licence is required)?

To be fair to the competition, Serif's *PagePlus* offers comprehensive page layout system at a cost of peanuts; though I've always find *PagePlus* to be awkward and clumsy in use. Where *OvationPro* really comes into its own is if you have special (or unusual) requirements. Almost everything about *OvationPro* is scripted, so tweaks and custom scripts are not only possible, they're pretty simple.

Recently David Pilling (the author of *OvationPro*) modified several primary keypress combinations to make it more in line with the shortcuts used on the Windows platform (as opposed to the RISC OS origins of the software). I was not at all impressed by this, having used the same shortcuts for over a decade, so I fired up the macro editor and changed them all back! *Just like that*. If I decide today that Sh^F should show me the object frame settings, and tomorrow prefer Sh^F to show me the list of fonts, and then decide ^F should be for frames while F4 is now for Find (à la RISC OS, if I remember correctly), *I can do it!* Show me *anything* in this price bracket that offers the same level of flexibility and raw power...

You might be wanting the URL...

<http://www.davidpilling.net/>

And no, David didn't pay me to write this.

Though, David, you *did* promise to write an article explaining a little bit about how the Windows version came to be, and differences between Windows and RISC OS... well, perhaps more a bit of arm-bending on my part than promising on his! :-)
Never mind, there are periodic updates and extensions to the *OvationPro* software, and I'm sure we users all find that of more value than an article, so I'll wait patiently...

So how was your Christmas? I watched the ugly little green bloke and his talking donkey friend again. Yup, of *course* I'm referring to **Shrek**! We also had a nice meal, a few days before Christmas. Our celebration on the "Solstice" (instead of Christmas) came about as when we were Care Assistants in England, we'd both work the holiday shifts. So we decided to take our celebration a little bit earlier. Between you and me, this is great. The supermarkets have not yet been stripped bare and those last-minute panic buyers are a couple of days away, but it is close enough to Christmas that they've already started marking down the chocolates and the decorations. So, don't think "pagan", think "Christmas without all of the headaches"!

Now the French are a little bit unusual at Christmas. You might expect to see a turkey or two around, but this is a fairly recent thing, thanks to the ex-pat population. Instead of turkey, the French are big on pork (as always, in this part of the country), wild boar (sanglier), pheasant, Bambi, ostrich, buffalo... all manner of weird and wonderful things. I'm afraid we stuck to spiced pork balls wrapped in veal, which I sort-of boiled in *plenty* of wine. I'm not entirely certain I could eat Bambi, on moral grounds rather than anything else... This was accompanied by veg (including a carrot soufflé!) and since my favourite bubbly cost 0,79 euros a bottle (oh yeah, I'm *such* a connaisseur!), there was plenty of that too.

Before I leave the subject of food, I wish to repeat the cooking instructions for a *Poisson à la Bordelaise* (a fish-in-sauce product) manufactured by *Claude Léger*:

Couvrez et laissez cuire *sur allure* de cuisson moyenne selon le tableau ci-contre.

Cook my fish with *allure*? Does this mean the cutey

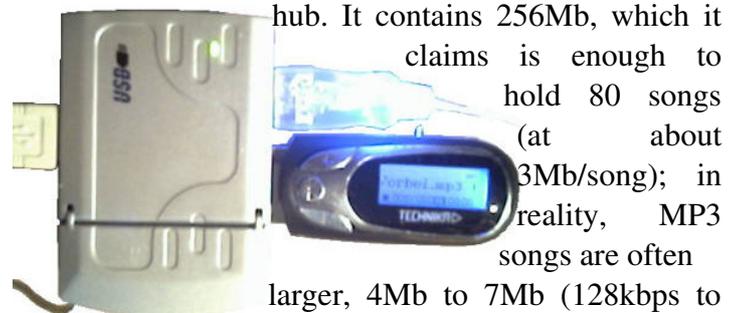
in those Renault adverts will twiddle my microwave's knobs with added va-va-voom?

Sadly, I'm about to break your romantic visions. While my first thought was "how French", it turns out that "allure" is a faux-ami. It means the Renault girl is out. There's nothing sexy or seductive about my fish, it just wants to be cooked at medium *speed*, though it is a bit of an old-fashioned expression as usual modern use would be "puissance moyen" (medium power).

Okay, time to let out a big sigh...

Next time, Gadget, next tiiiiime.....

I was given an MP3 player for Christmas. A USB-stick thing, pictured below plugged into the USB hub. It contains 256Mb, which it



claims is enough to hold 80 songs (at about 3Mb/song); in reality, MP3 songs are often larger, 4Mb to 7Mb (128kbps to 192kbps). The device also functions

as a type of removable harddisc. It can also function as a mixed-mode device, so using directories and sub-directories, I have arranged it to contain 49 JPEGs (just under 5Mb) as well as three hours and eleven minutes of music. The device has 35Mb remaining. It is easy to change things around, and file transfer is quite fast (my computer is USB 1.1), only marginally slower than copying stuff around the harddisc – much of the time is waiting for Windows to "think" about what it is about to do!

There are six "buttons" on the device. The ones you can see in the picture are "play/pause/stop" and "volume up"/"volume down" either side of it. If you



look at the pictures you'll see a little lever on the side. Press it in to activate "menu", nudging it side to side to select. In play mode, nudging it selects the previous/next song or a nudge-hold to forward or rewind; much like any decent CD player. The back-light is really bright, as you can see in these pictures.

I can listen to music for approximately six hours on a *single* cheap alkaline AAA cell. I am thinking of making a “fake battery” that’ll connect to an AA cell, as I don’t have a charger nor AAA rechargables. As may be seen in the picture above, it connects around my neck using a heavy-duty (detachable) cord. Cleverly, the earphones are built in to this cord, so as to minimise the risk of things dangling around. And finally, as you may have come to expect, there’s a little microphone. It can record (a little on the quiet side – it doesn’t appear to have much in the way of AGC) in either PCM, MSADPCM, or IMADPCM (encoding formats) in a variety of different sampling rates. 8000Hz sounds terrible, 48000Hz is total overkill. There are many options. I’ve gone for 11025Hz as a trade-off between (voice) quality and recording time. The display tells you how much ‘time’ you can record for. Also a nice feature is voice recordings (.wav, can be copied and used on a PC) are handled separately to the MP3s, so when you are in voice mode for dictating, you don’t have to wade through a dozen songs to find what you recorded.

The device is a “Technika” ML-2. Re-packaged for *Tesco*. Looking in the user guide (printed and available as a PDF on the driver disc) it also supports .uma files as well as the .drm file(s) that may be required to show you have the “rights” to listen to those tracks.

It sounds good on the supplied headphones, it sounds really good on padded earphones. I’m happy with it, and as it looks as if I’ll be able to use it to store digital photos for use at these photo developing (well, printing...) booths, it serves many purposes!

I especially like the solid-state nature of this little music player. If I wish to listen to music while walking or cycling*, I can go with this. I always wonder about the more “professional” players (such as the infamous Apple *iPod*) that contain a harddisc of 20-80Gb... doesn’t that just have *fragile* written all over it? Can you pop an iPod (or similar) around your neck while you go jogging? I wouldn’t subject my laptop to that sort of movement!

* I’m referring to cycling on a French country road where there’s little in the way of traffic. Listening to music and cycling near busy roads is *really* silly.

Actually, since I wrote the previous stuff about the little MP3 player, a couple of days ago, I have made a small modification, as can be seen in the following picture:



If a standard “budget” AAA cell runs for around six to eight hours, and I don’t have a charger for such, *and* I listen to a lot of music with the player – it stands to reason that I’d be going through eight to ten AAA cells per week. While that may not be a great expense (about 1,50euro or £1), it is an unnecessary expense and it isn’t good for the environment either. That’s approximately 78 euros a year, or about 460 AAA cells. It adds up.

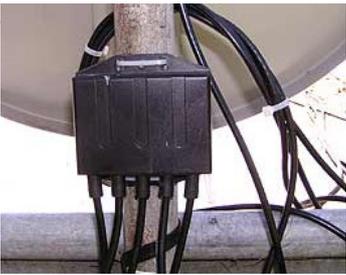
So I took the battery holder out of an old broken device I’d been meaning to throw out. Then, carefully, I removed the yucky contents from half of an old AAA cell. A wire was soldered between the two, the positive side was complete. The negative side of the AAA was completely rebuilt. It is a lump-head nail soldered on to a bit cut out of the bottom of a beer can, the negative wire soldered to the nail. The size of the AAA cell was made using a rolled-up piece from a plastic cup, the whole assembly held together quite firmly with hot-melt glue. More hot-melt glue was added to the battery holder so the solder joints would not be stressed. The battery holder is held to the neck strap of the player using a rubber band. Another rubber band holds the player’s battery compartment closed. I should have used fine ribbon cable (like the type going to the head of an inkjet printer) so I could keep the cover closed normally, but I didn’t have any.

However... *Problem solved!* It isn’t the most elegant solution, but the player runs for ages on an AA cell and they can be recharged. *Poifick!*

Rick, 2006/01/18

xemik.net

Once you have decided on the method (or initial method), the first step is to assemble the multi LNB bracket. Assembly instructions should be present with the bracket. Place the LNBs in the LNB holders and secure the holders so that they do not move about. Now, fit the bracket onto the boom arm of the dish. Most brackets will replace the existing LNB holder. You might have to make some adjustments at this stage, depending on the design of the bracket and how well it is matched to the dish. Make sure it is secured tightly.



We need to think about where we are going to place the DiSEqC switch. In most cases the box is attached to the pole behind the dish. The reason we have to know the location at this stage

is because we want to find the distance from the box to the LNBs. This measurement will be used to create the short lengths of cable that will connect the LNBs to the DiSEqC switch. Measure the distance and cut lengths of cable based on that figure (allowing for some slack). Fit F-plugs to the ends of each cable. Now, screw the cables into each LNB, waterproof the connectors, and attach the lines to the boom arm using a cable tie.

Let's quickly look in more detail at how I went about installing the multifeed. First I assembled the bracket. Then I placed LNBs into each holder. Then I attached the bracket & LNBs to the dish. Then I cut some lengths of cable (measurement based on distance from DiSEqC switch), fitted these with F-plugs, and screwed the cables into each LNB. Cables are *not* connected to the DiSEqC switch at this stage. The next step is to position each LNB at the appropriate focal point. If you are intending to use the receiver as a signal meter than you will obviously need something to connect the LNB cable to the receiver cable! Of course you could always use the Rick method of splicing two cables together! :-)

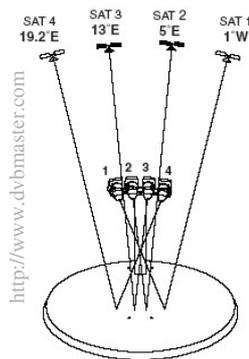
People might be tempted to do the sat-finding *before* fitting cables to each LNB. The problem is that you are not taking into account the extra weight of the cables. Some LNB boom arms are quite flimsy (the one on my outdoor dish certainly is!); therefore it's not something that can be dismissed easily. However, the biggest concern is the potential to knock something out of place while fitting the cables to the LNBs. This being a permanent install, you will need to screw the F-plugs fairly tightly to ensure that any twisting motion in the cable will not lead to the plugs slackening off (quite easily done). To me it's just plain common sense leave the sat hunting until *after* the cables have been fitted.

Of course if you are using a dedicated sat meter then you will have no need for a line coupler!

We have to do all of this before anything else so that we can make allowances for the "sag" in the boom arm caused by the extra weight at the end. We also need to find out if "vibration" is going to be an issue. If you do not intend to move your dish then you will have to determine if the "sag" is within acceptable limits. Otherwise the boom arm will have to be propped up in some way.

Those following methods 1 or 2 for installation of the multifeed will now have to move their dish to the required position. Most types of multi-LNB bracket will allow one LNB holder to be located over the primary focal point of the dish. You must ensure that the holder and LNB are firmly in place over this spot. To re-position the dish, please follow the instructions on sat-hunting, as provided in Frobnicate issue #22. You might not have to "fine tune" if you are following method 2 and intend to use the satellite for reference purposes only.

Okay, here comes the fun part – locating the secondary focal points! The procedure is somewhat more involved and time-consuming than the normal method of sat-hunting. This is because the secondary focal points tend to be less well defined. There is also the potential for overlap between adjacent focal points. As you move further from the central area, the points become more "elongated" in shape (and hence less efficient), plus the region of overlap becomes greater. The picture on the left shows how the focal points may be received, this is the basis of any multifeed system. The picture on the right is a representation of how the secondary focal points actually appear in front of the dish.



You are going to need more than just a sat-finder to be able to accurately pinpoint your chosen satellite(s). A good signal won't necessarily provide you with good reception. It could be that

you have strayed into a region of overlap without realising it (the combined signal would keep the meter readings from dipping). This is likely to produce noticeable interference in the form of sparklies on analogue receivers, and picture break up on digital receivers. The only solution is to measure both the signal strength *and* quality levels from your LNB. When we talk about good quality levels, what

we mean is a signal that is both strong *and* free from interference. Digital systems are able to provide a visual quality reading in the form of an on-screen meter. With analogue systems, signal quality should be apparent from the picture itself. Readings should always be made over a broad range of transponders.

You will need to be able to see the TV screen from the location of your satellite dish. How you go about doing this is up to you. If your dish is fairly low down, you might be able to take a portable TV outside with you. If your dish is higher up you could place a TV in front of a window that you can see. If there is no way that you can view the TV from the dish you might have to ask someone in the house to monitor the screen for you. Or you could just turn up the volume of the TV and go on sound alone (TV channel audio for ‘hissyness’ (analogue only) or variable audio tone from the quality meter).

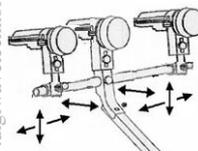
Most LNB brackets allow for the free movement of LNB holders from side to side. The whole bracket should also be able to pivot up and down and backwards and forwards. Please ensure that this is the case before you go any further. If you cannot get a holder or bracket to go where you want it to go then you will have to disassemble the whole thing and try again.

Connect the first LNB to the sat meter and loosen the holder. Slide the LNB to where you think the focal point of the satellite might be. Make small movements from side to side until you are able to find a signal. Try to make the meter peak if you can. Check that you have locked onto the correct satellite by tuning your receiver to a known channel. The resulting picture or quality level might be terrible, but at this stage we only want to make sure that we are on the right satellite. If you cannot see anything (or it is not what you expected) move the holder further along and try again. Once you have found the correct satellite, secure the holder to ensure that it cannot be knocked out of place. *[For most satellites, with the notable exception of 28.2°E, you will find it much easier to perform this using an analogue receiver. Most people who know “roughly” where Astra 1 is in the sky should be able to home in on it in a matter of seconds by using an analogue receiver tuned to a known channel (such as Eurosport or Viva). Unlike digital reception, an LNB “sort-of” in the correct position will allow you to ascertain that you are receiving the correct satellite. –Ed]*

The next stage is the fine-tuning. The thing of

importance here is the picture or quality level. Now, carefully slacken the holder and very gently start to move it, again from side to side. You need to be more precise this time. If you are watching the quality level, please note that there will probably be a lag between the movement of the LNB and a change in level on the screen. You might need to pause slightly after each movement. Flick between a selection of channels to make sure that the level is peaking throughout the range of frequencies. Once you are satisfied that you can get no more, tighten up the holder.

Now, loosen the bracket itself and repeat the same procedure, this time using an up/down and backwards/forwards movement. When you are satisfied with the result, tighten up and re-check the holder to make sure that it has not moved. You might have to readjust both the holder and the bracket several times before you are completely satisfied that you have the LNB exactly where you want it. Once you have done that, you can start on the next LNB. The problem with this (and subsequent LNBs) is that you can only move the holder, not the bracket. It shouldn't make too much difference though. The act of setting the first LNB ensures that the others are roughly on the same line and at the correct distance from the dish.



If some of your satellites are located towards the lower edges of the Clarke Belt, you will probably have to adjust the skew of the LNB. Again, you must exercise the same amount of caution to ensure that nothing else gets moved out of place.

After the last LNB has been adjusted, go back and double-check the holders. Switch off your receiver and remove the signal meter.

The next stage is to install the DiSEqC Switch. Some switches come with an integrated waterproof cover, while others have a cover that can be applied later. Just make sure that the cover can be applied with the switch wired up!

Your DiSEqC switch should have 2 or 4 input ports and one output. Each input will be labelled something like: LNB1, LNB2 (LNB3, LNB4), or Sat1, Sat2 (Sat3, Sat4), or A, B (C, D).

You need to give each of your LNBs one of these labels. The LNB will be connected to the corresponding input of the DiSEqC switch. For example, an LNB on Astra 1 can be called ‘LNB1’.

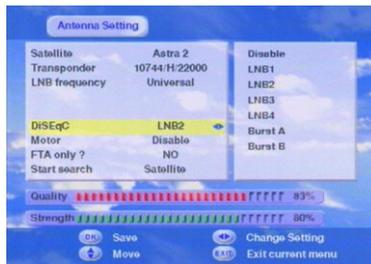
This will be connected to the ‘LNB1’ input of the DiSEqC switch. An LNB on Astra 2 can be called ‘LNB2’. And so on. It is a good practice to name each LNB in sequence (left-to-right or right-to-left). Another good idea is to put name tags on each LNB’s cable, with the ‘name’ of the LNB and the satellite that it is positioned on, as shown in the picture below. [*Say, that LNB on the left looks mighty familiar! :-)* –Ed.] The output of the switch is connected to the cable going to the receiver.

Ewen Cathcart



Connect the LNB and receiver cables to the DiSEqC switch and place the waterproof cover over it. Mount the switch at your chosen location.

The final stage is to program the receiver so that it will know which LNB corresponds with which satellite. In most cases you do this via the setup menu. On the Comag SL55 the DiSEqC settings can be found in the ‘Antenna Setting’ part of the setup menu. You first of all need to select a satellite (the transponder settings can be ignored) and then the appropriate DiSEqC input. In this example I have selected ‘Astra 1’ as the satellite and ‘LNB1’ as the input. The setting is saved, and the procedure repeated for the other satellites.



Ewen Cathcart

You might find that your receiver uses a different naming convention to that of the DiSEqC switch. Just remember that LNB1 = Sat1 = A, etc. This is where those name tags can be really useful!

Setting up an analogue receiver for use with a DiSEqC switch might be less straightforward. It can be a daunting prospect if your receiver does not happen to be menu based, especially if the manual is not translated well into your native language (naming no names!). Fortunately, many analogue receivers are sold with satellite channels already tuned in. You may find that a block of channels has the DiSEqC set up for reception from a group of popular satellites. All that you will need to do is determine which satellite goes with which DiSEqC input.

If everything is set up correctly, your receiver should automatically select LNB inputs as you switch between channels on different satellites.

This multifeed system is very flexible. However, if all that you are interested in is reception from two satellites that are spaced 6 degrees apart (namely *Astra 1* and *Hotbird*) then you should seriously consider installing a Monoblock LNB as an alternative (see part 1 for information on Monoblocks). If you are using a Monoblock that has separate heads (as opposed to the ‘integrated’ type) then you should ideally move the dish to the weaker of the two satellites. I cannot say if *Astra 1* is weaker than *Hotbird* – readings will vary depending on where you are in Europe.

Hopefully you will have found the information provided in this two-part article to be of use to you.

Ewen.

Now, me being a total pain in the butt, I asked Ewen about using a Monoblock for reception of Astra 1 and Hotbird, as well as an LNB pointed to Astra 2/Eurobird. In essence, one receiver covering 13°E, 19.2°E, and 28.2-28.5°E. Because I feel this may be something that a western European may wish to try, here’s what Ewen had to say..

You could use a second DiSEqC switch, but the receiver *would have to support DiSEqC 2.0*. Cheaper receivers tend to be limited to DiSEqC 1.0 or 1.2.

An alternative method would be to use a 0/12v switch. Input selection is achieved by means of a voltage impulse. The signal is used to toggle the switch between the two input ports. Some satellite receivers have a dedicated 0/12v output that can be used for this purpose. Alternatively, the switch can take a ‘tap’ from the receiver’s TV Scart socket (pin 8). The switch would be controlled using the Sat/TV button on the remote controller (the same principle was used in the ADX box to switch between ‘pass through’ and ‘Frequency shifting’ modes). The problem with these methods is that you need a separate line going out to the box. This could mean having to drill another hole in the window frame (or make the existing one bigger). One solution could be to use the type of switch that monitors voltage levels in the LNB cable. Putting the receiver into standby and then on again will cause the switch to toggle

inputs. Unfortunately this type of switch will not work with receivers that send power to the LNB while in standby. Having said that, many receivers allow you to turn LNB power off via the setup menu (save you having to turn the receiver off). *[Not entirely ideal, is it? Well, there is another way. –Ed]*

The multifeed article was written with the novice in mind. A better idea for reception of Astra 1, Astra 2, and Hotbird would be to have a setup consisting of 3 separate LNBS and a single 4-way DiSEqC switch. No need to worry about types of switches and whether they will work or not.

This is, of course, all food for thought. You can buy a big dish (in the order of 120cm) and a bracket that can accommodate four or five LNBS. This will allow reception of numerous different satellites.

A quick visit to <http://www.lyngsat.com/> may open your eyes to the many satellites that can be received. While there are numerous channels available FTA on SkyDigital (four BBC channels, four ITV channels, numerous specialist channels (i.e. CBBC, BBC News 24, The Horror Channel...), etc), if you have a working knowledge of a European language (French, Spanish, German, Italian?) then you will find lots of things to watch:

The regional Spanish channels are FTA at 19.2°E – from “TV Andaluca” in the south to “Euskadi Telebiste” in the north.

If you happen to speak German... well... your choices are almost infinite. Credit to the Germans, they never gave the world stupid excuses about “broadcasting rights”, so pretty much all of their mainstream channels are at 19.2°E in analogue, and pretty much everything is in digital on the same satellite.

In any case, there are a whole world of channels just waiting to be discovered!

TheFroblicateQuiz

In issue 23, I asked you “what happens next?” with this picture.

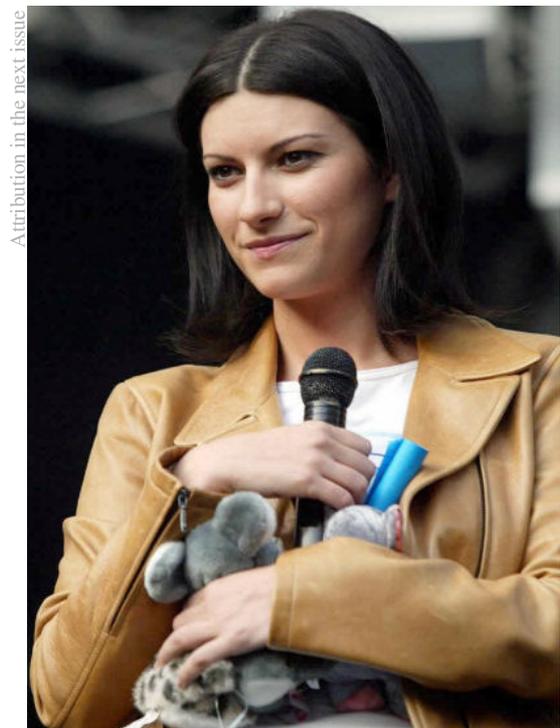


This is one of the video sequences that appears before a programme on the Italian channel RAI Uno. The person (in this one, a girl that is not unlike Cameron Diaz) gets up and touches the centre of the screen, which dissolves into the RAI logo (you can see this starting).



There is a connection between that answer and the next quiz...

Here's a picture. Obviously I've removed the attribution (that'd make it too easy!). I'll say where this image was sourced in the next issue.



Whoisthis?

Espoir

par Rick Murray
14th November 2004

Je déteste toi.

J'ai dévisagé à l'écran. Mon ordinateur portable me donne des messages fréquemment. Il me dit des choses ce qu'il s' imagine je serais concerné. Choses comme 'C a un secteur corrompre'. Choses que ne font pas sens. Mais, dans un certaine façon froide et électronique, qu'il a formé un logique parfait.

Mais ce... C'était différent. Ici, il y avait une émotion.

Donc, je fais mon réponse habituellement avec les messages mon ordinateur donne moi. J'ai cliqueté le bouton "Accepter"!

Il paraît ironique que mon ordinateur dit moi qu'il déteste moi, et le seul méthode a enlever le message est un bouton marqué "Accepter".

Ouais... Bon.

Je me soucie pas.

Mon ordinateur possède pas des sentiments - il est une machine! Ce message est un virus, non? Peut-être.

Quelque moments plus:

Tu êtes un idiot. Fou!

J'enleve le message.

Si j'ai reçu une lettre d'amour comme ça, je vomirais!

J'ai poussé ma chaise loin de la machine.

Non, ce n'était pas un virus. Ce est quelque-chose autrement.

Il n'est pas un miracle que vous êtes reste un célibataire.

Je me suis enfui. J'ai courir à la cuisine et j'ai brancher la bouilloire.

Non. Café ne fonction pas. J'ai bu une bière, mais il n'a pas apaisé mes nerfs.

Lentement j'ai approché mon ordinateur. Il y avait un message nouveau sur l'écran:

Toi m'avez parti.

Je me suis ennuyé.

J'ai traduit tous de ton fichiers en Russe.

J'ai ouvert Bloc-notes et je suis devenu suis déconcerté découvrir tout dans Cyrillic. J'ai regardé seul le clavier et je tapé "*Qui est vous?*" L'écran a clignoté et tout a devenu régulier encore, sans Cyrillic.

Je suis moi-même.

Whoa! Maintenant je me débrouiller avec ce concept. Donc j'ai tapé "*Quoi est vous?*"

Je suis ton ordinateur, bête.

J'ai débranche le module de puissance, mais l'ordinateur a changé à sa piles et marche plus. J'ai soulevé le côté gauche et je regardé les piles.

Je ne ferais pas ça, Dave.

"Arrêtez-moi!", j'ai dit quand j'ai tiré les piles et jeté elles en travers la chambre.

Plusieurs cafés plus tard. Je débrancher tout de l'arrière de mon ordinateur. J'ai glissé les piles dans la machine. Avec beaucoup d'optimisme j'ai appuyé sur le commutateur de la puissance.

Rien.

J'ai essayé encore et la machine a démarré ronronnement. Alors, il a cessé. Tout. Silence. Un message solitaire sur l'écran.

Systeme d'exploitation manque.

Il était à ce moment-là que je comprendre ma disque dur est vide. J'avais tué la présence dans mon ordinateur, mais il avait m'a battu.

Tout a disparu.

Effacé.

Winter in La Belle France Profonde

by Stephanie-Jane Murray

As I sat down to write this, my ‘new’ computer crashed. Rick said ‘Oh, that’s Windows 95 *again!*’. Why again???? Then, once Works was finally running, it decided to double-space itself, who knows why? I’m writing about this to let you guys out there know that it isn’t easy for the older generation to slide into computer technology (in my case it’s more like crashing headlong into a tangle of electronics positively fraught with unknown hazards).

The good news is that the very cold weather we’ve experienced since mid November has at last broken! You’ve had a much warmer winter in Britain than we have had in southern Brittany – even up in Scotland (hi, Ewen :-). On average, the daytime high never surpassed 5°C and we had so many sub-zero nights that we lost count. The wind from the East doesn’t bring us three wise men (in spite of the season), it brings us wind from Siberia. *Brrr!* Towards the end of last week, though, the Atlantic Westerlies returned, bringing rain, wind and Monday’s high of 11° which felt like a heat wave. Radio 4 had a report last night that it is -24° in Moscow just now, and the police have been issued with special warm boot-liners. Let’s hope our wind stays in any direction as long as it isn’t East. By the way, this is the same East wind that brings us heatwaves and droughts during the summer.

Last issue I wrote about how there was no water at all in our pond by the middle of summer, and Rick was having to mow the grass growing there. By late October the water had returned (and the wells were quite full, too, so the pump was working again) and is much clearer than usual. The resident coypu family and the little moorhen are on Cloud Nine, there is such a supply of greens for them to consume! My neighbour’s brother had seven of his horses in the field beside the pond, and it was so pretty when looking out of the kitchen window. For a while we had to walk up to the field every afternoon and break away the ice in the horse’s water trough. They went back home just before

Christmas, much to the dismay of our cats, who are fascinated by the big animals with four legs and soft noses.

This year we decorated the living room with lots of festive colour. We had a little tree on the table, tinsel garlands around the doors, stockings pinned up on the mantle-piece, and trails of fairy lights everywhere. We even had a bunch of orange fairy lights inside the wood-burner (which isn’t used because the chimney wasn’t swept this year), and when they were lit, they looked just like a blazing fire!



We went to the annual Christmas dinner made and served by classmates at EnVol on the night of 17 December. It was +4° when we arrived at 18h30, and -3° when we left at midnight. It was a fantastic meal; Rick and I had spent most of the previous day in Pouancé helping to make the home-made Yule logs. 124 people came – that’s a lot of Yule logs. We were also invited to a buffet meal on the 24th, and to a big traditional meal on the 25th. We managed to squeeze in our own meal on the 23rd, which wasn’t traditional at all – it included stuffed cabbage leaves and carrot soufflé. Is that adventurous, or what?

‘Celebrating’ New Year’s Eve for me consists of trying to stay awake to midnight, or even better, to an hour later so that I can listen to the bells of Big Ben on Radio 4. Did any of you try to listen to Big

Ben live on Radio 4 a couple of years ago (2004?) when the outside broadcast failed to play them and we were treated to a minute or two of silence? Anyway, I wish all of you – wherever you are – a very happy 2006.

My boss, from the nursing agency in Hampshire where I used to work, sends a little Marks & Spencer food parcel every year. It contains all those impossible-to-find-in-France things like Christmas tea, Christmas cake, Christmas pud. It arrived on the 24th this year, in a special ‘Post Office Preferred’ grey polythene parcel-mailing envelope. This envelope self-seals. Only...it isn’t a very strong seal, and when I opened the parcel it was immediately obvious that the parcel had been opened before it reached me. The wrapping paper of each and every little gift inside had been ripped away with a hole large enough to tell exactly what was inside the paper. In the case of the box of tea, the box had been opened as well. This puzzled us for a long time: once the wrapping was torn, it was easy enough to see that it was a box of tea. Why was it opened? Then it dawned on us – the tea inside the box was contained inside two foil-wrapped inner packets. How much do you want to bet that the foil set off someone’s metal detector, and this someone decided to have a good look to see if it was the metallic strip on pound notes that was responsible?? If anyone out there has a better explanation, please do let us know. Apparently we are supposed to think nowadays ‘at least the parcel *was* delivered’, but what kind of logic is that???

Take care with the kind of envelopes you send parcels in, use the kind that seal very securely, so it is obvious if anyone tries to open them. I don’t know where my parcel was opened, but would like to add that I received small parcels from Spain, Canada, and Australia, none of which were opened beforehand.

Just as a note, the tea was very nice, we had a big pot at 8 AM on Christmas morning, when we were up to photograph the sunrise, which was incredible. This issue’s Good Read: *Angel’s Crest*, by Leslie Schwartz, published 2004 by Random House. When his father stops to follow the tracks of a deer, three year old Nathan escapes from the vehicle into the cold, snowy woodland of northern California. This is the story of how a small community is drawn together into the search for the child, and the repercussions of just a few minutes inattention by the boy’s father.

Oh, have you heard? Bob Dylan is supposed to be hosting a chat show. Well, that will be different from all the touring he has been doing...

I’m going outside now to look for Signs of Spring. The Japanese Quince has tiny bright orange buds and the cats are swaggering around, so the outlook is hopeful!

Stephanie-Jane Murray



The knitting machine...

In clearing out the cupboards, mom came across a *Bond* knitting machine. She could never get it to work correctly so, being of a mechanical nature, I thought I would “*give it a go*”...



Here you can see it attached to a table. It has not yet been threaded.

My project was a jumper. Apparently of the “raglan” style, though I’ve not seen that word before. Other things I’d never seen before is stuff like:

Knit until COR, then full-dec 1st; knit 3.
With COL, full-dec 1st, knit 3.
Repeat 60.

Which translates to:

Knit a row (or not) until the carriage is on the right, then decrease a stitch using a fiddly little tool to take three stitches at one time and move them all one place to the left. Push the carriage across to knit the row. Push the carriage back, then across again. The carriage will now be on the left. Do the fiddly thing again, followed by the three pushes of the carriage. Repeat all of this until sixty rows have been knitted.

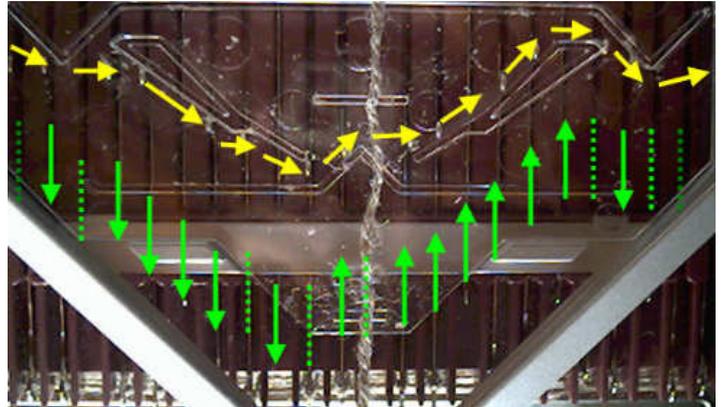
It suddenly occurred to me...



```
rows = 0
if (carriage_position() != RIGHT)
  knit_rows(1);
do while (rows < 60)
{
  decrease(1, RIGHT);
  knit_rows(3); // ends with car. left
  decrease(1, LEFT);
  knit_rows(3); // ends with car. right
  rows++;
}
```

What was I doing here? I was executing a program! I was acting as the processor, interfacing with the hardware, in order to create output. Seen in that way, it was a bizarre – but oddly liberating – experience.

The operation of the knitting machine itself was simple yet effective. The diagram below shows this. There are several changeable plastic “plates”. The needles have a lug at the top to guide them through the plate. The yellow arrows show the path through the plate (inversed for travelling the other way) and the green arrows show the movement of the needles themselves.



It is a fast way to ‘knit’ a hundred tiny knots, and quite a fast way to make an entire woolly jumper!

The problem mom was having is that either there is a fault in this particular machine, or both of us managed to misread the instructions. The needles don’t appear to come out far enough so it is *very* easy for them to pop off. You’d need to run your hand under with the carriage to keep the knitting on the needles.

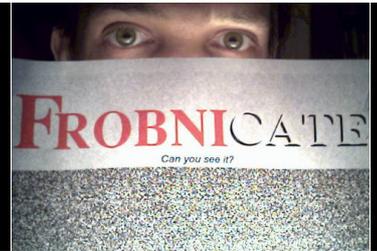


Now, I’m not going to claim to have made a perfect jumper, I may have missed a row or two along the way...

...but I’m *very* happy with the results!

Rick, 2006/01/18

The Wrap Party



And here we come to the final page of another issue of *Frobnicate*. You may have noticed that ‘Editor’s Notes’ was missing from this issue. This is because I wanted to keep the page count to a multiple of four pages, and it was far easier (given that I have to make the PDF copy *and* the web site *and* watch two movies – all by the end of tonight!) to remove a page instead of adding three.

As always, and I get déjà vu writing this – it is *your* magazine as much as it is mine. Please send in your suggestions of what you would like to read. What sort of direction would you like *Frobnicate* to go in, and preferably why not write something yourself?

Don’t forget – advertising in *Frobnicate* is free. It is arranged on a ‘first-come first-served’ dependant upon available space. A6 or 1/4 or 1/3 column adverts are preferred. RISC OS DrawFiles are preferred, followed by JPEGs. You can also submit PDF or WMFs, but the results won’t be exact as I’d need to recreate the advert. I cannot easily read EPS so please don’t use that format. In any case, contact me and we’ll see what we can do. You can advertise anything (legal!) that you feel may be of interest to the *Frobnicate* readership.

The problem with the first release of the PDF version of issue #25 was because I need to ensure that the *Unicode* option is not selected within *OvationPro* when I am generating a PDF. It seems the PDF setup that I am using (CutePDF) does not support Unicode, so the ‘fl’ and ‘fi’ ligatures both end up as ‘•’. I’ll have to remember to double-check this, and then check it again to make sure!

I have been asked, since I now live in France, if I could write something in French. Well, one of my earlier efforts is on page 16. Make of it what you will! I have had a few things published in the EnVol journal, which I’m quite pleased about; though I’ve a long way to go before I can claim to be fluent in French. My pronunciation especially needs work; it

is always disheartening when you say something and the person you are speaking to looks blank, but on the other hand I have ‘blank’ moments myself! Never mind, I’ll get there...

In the past I have written about the Sky ‘Digibox’ and Free-To-Air channels at the 28.2°E location. I’m sure most people in England know this already, however Europeans may not – in late 2005 the ITV channels became FTA, and ITV4 was launched. This means your primary FTA channels are:

BBC 1

BBC 2

BBC THREE (after 7pm UK time)

BBC FOUR (after 7pm UK time)

ITV1

ITV2

ITV3

ITV4 (after 7pm UK time)

Along with the likes of *SAC* (if you understand Welsh), *The Horror Channel* (movies), *True Movies* (movies (!)), *Sky News*, *BBC News 24*, *CNN International*, *Chart Show TV* (music), *The Vault* (music), *B4* (music), *Classic FM TV* (music) and some others. Most of these are 24 hours. All of these should be watchable with a 60-80cm dish (France) or a 120cm dish (West Germany, Spain, Italy) and an FTA satellite receiver in the 50-60 euro price bracket. If you have an existing receiver that supports DiSeqC, why not add a switch and a second LNB? Ewen tells you how on page 11. You can find out what channels are available, in case any take your fancy, at:

<http://www.heyrick.co.uk/ricksworld/digibox/>

And this brings me to the end of this issue. I will plan the next issue for late-May or early-June. More details on the web site closer to the time.

Until then, I bid you adieu.

Best wishes for 2006.