A BEGINNERS GUIDE TO SSTV

Those of you who know Pam will be aware of her tremendous enthusiasm for Slow Scan TV and her willingness to help any and all who ask her for help and advice on the mode. The following article is essentially the paperwork that Pam produces and sends out to those who contact her with questions concerning SSTV, and I consider it well-worth reproducing here as a valuable source of information, some of which I have to admit is not in my new book ! ... Mike

Pam C. Penlington GW0LAL

HELLO FROM GW0LAL

This guide is basically a list of available equipment and SSTV modes/speeds found on the Amateur frequencies. Any technical or in depth information is not included. My intention is to help people who would like to try slowscan, but do not know which equipment is available, or the speeds/modes it is capable of transmitting. It is gleamed from my personal knowledge and information received. I am constantly adding to the list as and when information is available. If anyone reading this can supply me with extra facts I will be very grateful.

Information and help can always be acquired from any of the SSTV nets found on the bands. The majority of slowscan stations are helpful and patient with newcomers to this beautiful mode.

Apologies in advance for my lack of grammatical flair, or errors in the listing, the facts are hopefully accurate.

I have included a few sample pictures so that you have some idea of the variety of picture content found on the bands. Due to hard drive space most of the pictures are my own, but I have included a few that I have received on air via the SSTV mode from other people. My pictures are full colour and generally I would transmit them in the M1 or S1 high resolution mode. To capture them for SSTV use I use the following method:

First and foremost is acquiring the necessary material, either calendars, children's books, postcards or magazines, etc. In fact any printed material that I can find.

From time-to-time I use live shots of my shack, family, or self, and during the summer months I go out and about with my video camera taking film of any interesting subject. The camera I use is a JVC S707 Camcorder, which also comes in handy for family use apart from the hobby. My SSTV scan converter is a Robot 1200c and for lighting I have several methods:

☛ 1) A Halogen 500W floodlight (the type used externally for garden use). This I find useful for lighting a large area, e.g: for taking shots of the shack or equipment,

☛ 2) A 120W Tungsten floodlamp,

☛ 3) A Halogen 150W bulb in an Anglepoise lamp,

☛ 4) A 100W Xenophot HXL 12 volt bulb with a compromise adaptation mounted in an Anglepoise lamp. This is a very small bulb, but gives a very good light for lighting up printed material, calendars, etc.
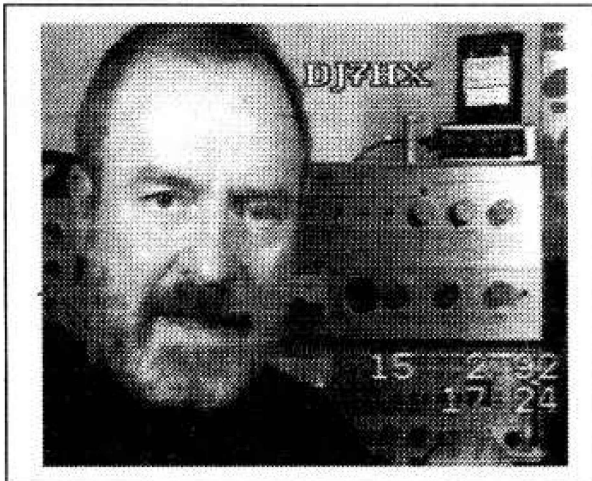
I can plug the video output from my camera directly into the Robot 1200c unit and monitor whilst I set up the lighting, then it is merely a case of pressing one button on the 1200c and I have a captured picture. This I can then save to computer disc.

I sometimes use a small video enhancer in-line between the camera and 1200c, which gives me more control over the video level and sharpness. The picture, once saved to disc, can be recalled any time for transmission, or I can firstly, via software, add some text or a border, etc., to it. I generally spend more time preparing my SSTV pictures than I actually spend on air transmitting them, and I am usually on air most days!

The samples reproduced here were reduced down to 256 greyscale using computer software, the original colour version is really a different world. I do mainly work in colour, but admire some of the stations that produce excellent quality B&W SSTV pictures. As with photography, it is an art itself.

WHERE TO FIND SSTV

3.730 ± QRM ... lsb (Most Sunday mornings 11.30 + conditions allowing and some evenings .... mainly colour transmissions in Ml mode)

7.042 ± QRM ... lsb (Most weekday afternoons ... QRN/QRM being a problem mainly colour transmissions sometimes B&W if requested)

14.230 ± QRM ... usb (Very active band if propagation is OK ... all modes)

21.340 ± QRM ... usb (Rarely used which is a shame)

28.680 ± QRM ... usb (Very popular when open)

144.500 ... FM (Very active in some parts of the UK)

All modes of SSTV are permitted on any of the above bands ... the mode used is merely governed by the stations who meet up and the equipment they have.

Fax can also be found ... on 14.230 ± and to a newcomer could be mistaken as SSTV. With experience the modes and speeds can be identified by ear, also some SSTV equipment has it's own individual sound. A Robot sounds slightly different to an Amiga or SC2 transmission.

Other bands can be used, but as I don't use them I am not familiar with the recommended frequencies.

There is some question at the moment as to the availability of the Robot 1200c. Robot Research no longer have Worldwide agents. Some say they are still producing 120Oc's.

When buying a new Robot it only has modes up to 72 second colour, details of modifications to bring it up to all modes are available from Martin Emmerson G30QD.

ORDERING EQUIPMENT / SOFTWARE

When placing an order for software always give full details of the computer you intend to run it on .... e.g: Model & make / Video display type / Memory / Speed and Drives.

When ordering from abroad always check that the system is suitable for the British power supply and the PAL system.

I am not prepared to quote prices but as a guide line ..... the dedicated units are the top of the range and are priced accordingly. Home constructed units come next and are good value for those with the ability. Computer stand-alone systems are the cheapest if you already own the appropriate computer. Some of the software is very good depending on the resolution you find acceptable.

ACQUIRING PICTURE MATERIAL FOR TRANSMISSION

Dedicated units ... Robots and Robot clones / SC1&2 ... have a camera input socket and a computer is not necessary. (Video camera / B&W surveillance type camera or video output from VCR). If a B&W camera is used for colour pictures red, green and blue filters are necessary and the R, G and B individually captured to form a colour picture. Some of the units can be interfaced to a computer, which can be used to store pictures and advantage can be taken of graphic/art software.

Alternately, pictures can be stored on a VCR tape or a good quality audio cassette, with either of these two options expect some deterioration of the stored picture. Pictures saved to computer disk are saved and loaded back maintaining all the original quality. Less convenient is to capture a picture live whilst on air.
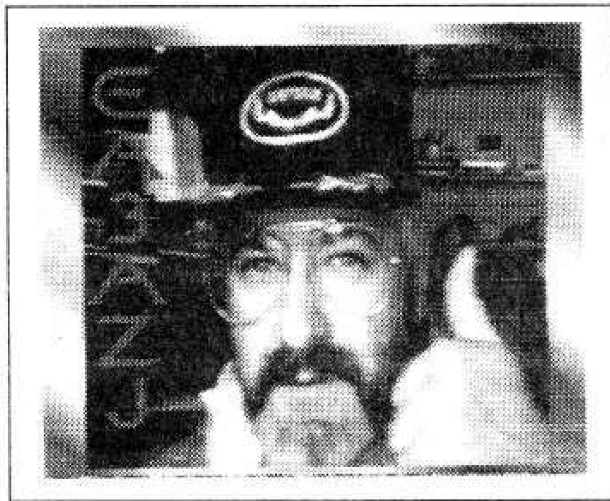
For computer SSTV software systems, either computer graphics can be used, or it is necessary to have a digitiser board for the computer in order to use a camera ... possibly a hand scanner can be implemented .... or received pictures can be retransmitted with a replay message on them.

The subject matter is a question of individual taste and material available. Picture content is extremely varied, ranging from self portrait and shack pictures, to artistic graphic compositions. Scenery, animals, vehicles and flowers are used, also cartoons and fun pictures. Some stations concentrate on quality and resolution, others on interesting picture content, to achieve both is the ultimate. An active slowscanner is constantly looking for new material. With B&W SSTV the aim is to get sharp pictures with good grey scales ranging from black to white. Lighting is not too critical to achieve good results. When capturing a colour picture for transmission, lighting is more important, the aim being to get good colour saturation and resolution. Personally, I find natural skin tones the most difficult to achieve.

It is not my intention to recommend any particular equipment, readers must make his / her own choice. The choice depends on partly finances and how deeply one wishes to become involved in slowscan. If you know anyone who is active in this field then it would be advisable to have a chat with them before making any purchases.
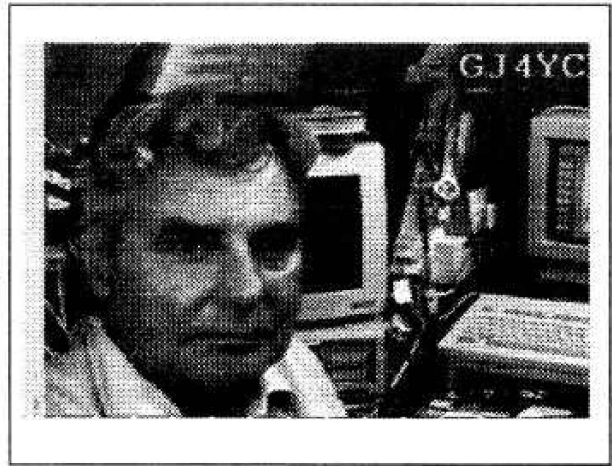
AVAILABLE BOOK ...

SLOW SCAN TELEVISION EXPLAINED by Mike Wooding G6IQM. available from BATC Publications, 14 Lilac Avenue, Leicester, LE5 1FN.

GROUPS to join ..

IVCA .... 101 Oenoke Lane, New Canaan, CT 06840, USA

BATC .... "Grenehurst", Pinewood Road, High Wycombe, Bucks, HP12 4DD UK

AVAILABLE EQUIPMENT

ROBOT 1200c

MOST popular, used worldwide and compatible with all modes. Colour and B&W. Kept up to date with all modes by Martin G30QD developing and supplying new EPROMs on a regular basis as necessary. Colour and B&W. Computer not necessary but Software and interface available for PC clone/BBC/Commodore and Amiga (the PC being the best) in order to save/load pictures and enhance pictures. This unit I have and can thoroughly recommend it as excellent and, I believe, the best. Below are listed available boards for those who wish to build their own.

SUPERSCAN 2001

Home Brew Scan converter with some advanced features beyond the Robot 1200c. (boards and EPROM + list of parts). Available approx. September 92, should be very popular. Same modes as Robot 1200c. (SAE to G30QD for full information). Computer not necessary, but software and interface available as for Robot 1200c. This will be excellent and certainly worth seriously considering. G30QD and friend have implemented some features beyond the Robot 1200c.

LM9000 (VK3LM)

Robot 1200c compatible boards for home construction. Computer not necessary, but software and interface available as for Robot 1200c.

RIBBET (VE3DUO)

Robot 1200C compatible boards for home construction. Computer not necessary, but software and interface available as for Robot 1200C.

NS-88 (JF3GOH)

Robot 1200c compatible boards for home construction. Computer not necessary, but software and interface available as for Robot 1200c.

ROBOT 450c

Very few used now. Similar in appearance to the 1200c, but no modifications available for very high resolution modes. Colour and B&W, highest resolution = 72 sec colour. Computer not necessary, interface and software availability ? possibly same as 1200c. I have worked a few stations with the 450c and received very good

pictures, but feel it would be unwise to purchase one because of not being able to update it to modern high resolution modes.

ROBOT 300 & 400

Was very popular and still in use. 8 sec B&W only, some with 16 sec. Computer not necessary, no known software or interface for computer. I have worked stations with the 400 received pictures were very nice. But no updates to other modes possible.

ROBOT 400C & 450C

Upgrade of the 400 with ability to TX/RX colour and can be interfaced to the Robot 800 keyboard. I have never worked a station with this unit, but it's not high resolution, nor is it possible to update.

ROBOT 800 / 800C

These are multimode keyboard units, (ASCII, CW, SSTV), SSTV is TX only, the intention being to use with all the above units (not 300 or 400) for text generation.

VOLKER WRAASE SC1 (DL2RZ Equipment)

Older model common in Germany and some stations in UK compatible with Volker Wraase modes only, highest resolution being 96 sec and FAX. Computer not necessary, no interface or software available. I have worked many stations using the SC1 and had some nice pictures .from them, quite a number of SC1 owners are changing to the SC2. Optional keyboard available for SC1 and SC2.

VOLKER WRAASE SC2 (DL2RZ)

Mainly Germany and gaining in popularity. Compatible with all Volker Wraase modes and FAX .... M1 and S1 (not AVT), 60 sec and 120 sec.. Available from DL2LZ. Computer not necessary, but software and interface available from Volker Wraase for the Amiga computer. Software and Interface for IBM PC available January 1993.

DK7BO unit; RX only at the moment.

Gaining in popularity mainly Germany. Available from DK3BO. RX all SC1 modes / M1 AND S1. Interfaces to IBM clone computer. A few TX prototypes (home brew) being used in Germany. I have worked stations with the prototype TX unit and received excellent M1 pics.

DRAE UNIT

B&W 8 sec TX/RX only. Some in use. Available Amateur suppliers. I have only worked one station with this unit .... OK for 8 sec B&W low resolution.

DFM-USA UNIT

Colour and B&W. Compatible with most current SSTV systems. No details yet, information available from K8SQL or AB4QC.

MFJ multimode Unit

Colour and B&W ... TX/RX .... 8, 12, 24, 36 B&W; 72, M1 ,M2, S1, S2 Colour.

AMIGA COMPUTER ... Very popular worldwide

AVT system available from Advanced Electronic Applications (USA) and possibly from ICS (UK) ..... All modes and Fax. DF51R software and interface. Volker Wraase modes + M1 & M2. C-DATA software + Interface. Volker Wraase modes, M1, M2, S1 + S2.

PC COMPUTER ... Several stations in USA now using PC software.

VIEWPORT VGA ... Colour and B&W (KA2PYJ),
RX: 8/12/24/-16/72/M1/M2/S1/S2.   TX: 8/12/24/36/72/S1.
32K Hires video card advantage, but not essential.   Interface unit, or 2 kit + software, available from A & A Engineering.

PASOKON TV ...   Colour and B/W (WB2OSZ),
All modes/speeds TX/RX.
32kHires video board advantage but not essential. Available from John Langner WB2OSZ and KM Publications.

SSTV FAX ... B&W, (ON5KN) + simple interface details. Available via Packet.

KINNEY SOFTWARE ... (No details yet)

SOFTWARE CONSULTING GROUP ... (Most modes B/W + Colour)

BMK MULTIMODE ... No details, believed to be low res B&W

JVFAX V5 (FAX/SSTV) ... TX/RX Fax / RX SSTV. Few basic modes.

K1UTI ... IBM/MFJ-1278 Colour. Software to use with this unit / no details.

MULTISCAN ...   Colour and B&W = Fax (PEIKSW/CombiTech)
RX: 7.2/8/16/32/24/48/96; TX: 7.2/8/16/.32

ARCHIMEDES COMPUTER Colour and B&W
RX: M1,M2,S1,S2,AVT90,AVT94,8,16,32,B/W.
TX ... Ml,M2,(adding 8,16,32 soon).
Details available. SAE + £1 from G4IJE.

BBC COMPUTER

A few stations, reasonable for B&W, but poor on colour. Compatible Volker Wraase modes and standard Robot 1200c modes. Not Martin/Scottie or AVT. I have worked a couple of stations with this system and found the colour on computer generated graphics only acceptable, retransmitted colour pictures were extremely poor, B&W was better. Details available from Technical Software.

ATARI COMPUTER

WA20SZ ... Colour, TX/RX all modes VE2BNC ... Colour, TX/RX, no details KC5FW ... B&W, Colour?, no details.

SPECTRUM COMPUTER

GIFTU SOFTWARE ... TX colour and B&W, RX in B&W only.

RX SOFTWARE from Technical Software ... Due to the low memory of a Spectrum high resolution SSTV is not possible.

DRAGON 32 / 64, TRS-80 COMPUTER

No details available but believe software available from G4BMK.

COMMODORE VIC-20 AND CBM64

RX only B&W Software Available from Technical Software, Upper Llandwrog, Caernarvon, N.Wales.

B&W low resolution software believed available for: TS-80 and Tandy Coco. No address, most likely in the USA. Various other B&W low res systems. No details known.

MODES ... SPEEDS OF TX/RX

Most common modes heard on the bands

B&W: 8/16/32 Colour: 96/M1/S1/72/36/AVT.90/96

VOLKER WRAASE (DL2RZ) or European mode ... mainly used in Europe.

B&W: 8 sec / 12 sec / 24 sec / 36 sec; Colour: 24 sec / 24 sec / 36 sec / 60 sec 96 sec / 120 sec

ROBOT 1200c mode ... USA modes ... used worldwide.

B&W: 8 sec / 12 sec / 24 sec / 36 sec; Colour: 12 sec / 24 sec / 36 sec / 72 sec

MARTIN mode (G30QD) ... used worldwide.

M1 Colour (highest res 120 sec to TX) commonly used in Europe.
M2 Colour (high res) rarely used.
M3 and M4 colour (lower res) never used.

SCOTTIE mode (GM3SBC) ... used worldwide.

S1 colour (highest res 115 sec to TX) Favoured by USA/JA/ZS/VK and ZL
S2 colour (high res) rarely used.
S3 and S4 colour (lower res) never used
Scottie DX colour (very high res) 3 mins to TX generally used between VK/ZL or ZS when in contact with USA.

AVT modes / AMIGA Computer ... used USA and Europe.

Most owners of Robot 1200c have had modifications to their units to RX/TX these modes. AVT 188 sec colour (highest res) sometimes used AVT 96 sec colour (high res) Amiga users favourite AVT 90 sec colour (high res) commonly used generally AVT 125 sec B&W (high res) These are the modes I have on my Robot 1200C. I think there may be more on the Amiga.

USEFUL ADDRESSES

ROBOT RESEARCH CORPORATION, 5636 Ruffin Road, San Diego, CA92123 USA

I/O CARD (to interface Robot 1200 and clones to an IBM/MS DOS computer): Martin Emmerson G3OQD 6 Mounthurst Road Hayes Bromley Kent BR2 7QN Tel: 081 462 -4223.

Other sources..... Metra byte P10-12 card from: MetraByte Corporation 440 Myles Stanish Blvd. Taunton, MA 02780 USA; or Metra Byte P10-12 card from: Keithley Instruments Ltd. 1/3 Boulton Road, Reading, RG2 7BR. (Also from VE3DUO)

MARTIN EPROM (M1,M2,S1,S2,DX and AVT modes): Martin Emmerson G3OQD 6 Mounthurst Road, Hayes, Bromley, Kent, BR2 7QN. Tel: 081 462 4223

SCOTTIE EPROM (S1,S2 and DX modes): E.Murphy GM3SBC, 65 Silverknowes Crescent, Edinburgh, EH4 5JA.

SUPERSCAN 2001: Jad Bashour, 55 Brampton Road, London, N15 3SX. Tel: 081 809 3911; or Martin Emmerson G3OQD, S.A.E for info.

RIBBET SCAN CONVERTER BOARDS (Robot 1200c compatible boards) B.Summers VE3DUO, 336 Goodram Drive, Burlington, Ontario, Canada, L7L 2K1.

LM-9000 SCAN CONVERTER BOARDS (Robot 1200c compatible boards) J.Wilson VK3LM, R.M.B.4201A, Tallangatta Valley, 3701 Australia.
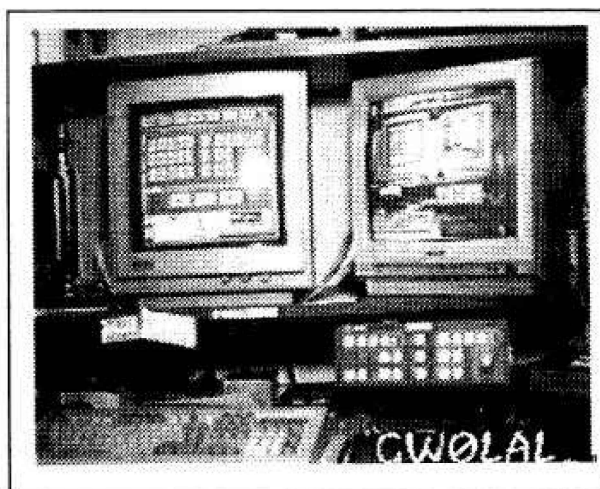
NS-88 SCAN CONVERTER BOARDS (Robot 1200c compatible boards): M.Yamafuzi JF3GOH, P.O. Box 670, OSAKA, 531 Japan.

SC1 and SC2: Volker Wraase DL2RZ, Wraase Eleckronik, Kronsberg 10, D-2300 Altenholz, Germany.

DK7BO RX SYSTEM: Werner Statmann DK7BO, Middelreeg 22, D-2933, Jade 1, Germany

DFM-USA: K8SQL, 265 Outlook, Youngstown, Ohio 44504-1846 USA; or AB4QC 3575 Shadywoods Circle, Lawrenceville, Georgia, 30244 USA.

MFJ Enterprises Inc. (Slowscan Unit Boards and EPROM + instruct.): Box 494, Miss. State, MS 39762 USA

MS/DOS SOFTWARE for Robot 1200c

HIRES: T.Jenkins N9AMR, 5968 South Keystone Ave, Indianapolis, IN 46227 USA.

GESTI: Torontel Technology Systems Ltd., 94 Sackville Street, Suite A, Toronto Ontario, Canada, M5A 3EJ.

SCAN: Bert Beyt W5ZR, 301 Tampico Street, New Iberia, LA 70560, USA.

SSTV by KC5VC: Garnett Bebermeyer WB0UNB, 15 Almeda Court, Fenton, MO 63026, USA.

IMAGE: George Isley WD9GIG, 746 Fellows Street, St.Charles, IL 60174, USA.

also: P.Mescalchin I3XQW, Via Monte 1, I-35100, Padova, Italy.

AMIGA & COMMODORE SOFTWARE for 1200c: T.Hibben KB9MC, Mule Hollow Road, Box 188 DeSoto, WI 54624, USA.

BBC SOFTWARE for 1200c: P. Turner G41JE, 61 Primley Lane, Sheering, Bishops Stortford, CM22 7NH.

COMPUTER STAND ALONE SOFTWARE SYSTEMS

IBM MS DOS COLOUR; "Pasokon TV": J.Langer WA20SZ, 115 Stedman Street Chelmsford, MA O1824, USA. European Agent: KM Publications, 5 Ware Orchard Barby, Nr.Rugby, Warwickshire, CV23 8UF, UK.

IBM MS DOS COLOUR; "Viewport VGA": A & A Engineering, 2521 West LaPalma, Unit K, Anaheim, CA 92801, USA.

C-64 / C-128 / IBM MS DOS / TANDY: Kinney Software, 974 Hodson Road Pownel, ME 04069, USA.

IBM MS DOS COLOUR; Software Consulting Group, 1303 South Ola Vista, San Clements, CA 92672, USA.

IBM MS DOS COLOUR + FAX; CombiTech, Morelstraat 60, 3235 EL Rockanje The Netherlands.

IBM / MFJ-128 COLOUR; John Tuttle K1UTI, Barrington, NH 03825, USA.

IBM MS DOS "Jvfax V5"; E.Backeshoff DK8VJ, Obschwarzbach 40A, D-402O Mettmann, Germany.

ATARI COLOUR; J.Langer WA20SZ, 115 Stedman Street, Chelmsford, MA 01824 USA.

ATARI COLOUR; R.Gendron VE2BNC, 315 6025 Croissant Brodeur, Brossard Longueuil, Quebec, Canada, J4Z 1YT.

ATARI COLOUR ??; J.Adams KC5FW, 17106 Happy Hollow, San Antonio, TX 78232, USA.

AMIGA COLOUR (SSTV + FAX); Advanced Electronic Applications Inc., P.O. Box C2160, 2006 196th Street, S.W. Lynwood, WA 98036, USA.

AMIGA COLOUR (SSTV + FAX); K.D.Gerber DF51R, Gutacherrin 23, Mannhein 6800, Germany.

AMIGA COLOUR; C-Data, 8068 Pfaffenhofen/Im, Hohenwarter Str. 6, Germany.

ARCHIMEDES COLOUR; P.Turner G41JE, 61 Primley Lane, Sheering, Bishops Stortford, CM22 7NH, UK. (S.A.E + £1 for Demo disk & details)

BBC / COMMODORE / SPECTRUM / VIC20 & CMB64; Technical Software Upper Llandwrog, Caernarvon, Wales.

SPECTRUM; J. Pearson G1FTU, 42 Chesterfield Road, Barlborough, Chesterfield Derbyshire, S43 4T7.

DRAGON 32/64 / TRS-80 / IBM MS DOS; Grosvenor Software, G4BMK 2 Beacons Close, Seaford, Sussex, BN25 2JZ.

Pam C.Penlington, 7 Thornley Avenue, Rhyl, LL18 4HS, North Wales.

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