WIRE LINE worldwide news & views number 2

TLS HAS GOT IT TAPED!

Although the tape centre is by no means a new addition — the company has run a PDP II and Mag. Tape transport at East Leake since 1975 — its recent expansion opens wide horizons for the development of future computer based services.

Technical Logging Services (TLS) has two responsibilities. Since it first opened three years ago its main activity has been the production of nine-track computer tapes from the raw sonde output recorded on normal cassettes by engineers during a logging operation. As a secondary activity Ian Edwards (Manager, Interpretation and Computer Services) and Martin Enstone (Software Engineer) are spending a good deal of their time developing the complex programmes required to perform detailed analysis of log data.

The first job, tape conversion, is, theoretically, fairly simple. For clients who require the service, BPB offers logs in two formats — the familiar curve on chart paper, and as magnetic tapes containing log information in a form which can be used by the client's own computer.

BPB solves the problem of converting sonde output to computer input, avoiding the necessity for massive hardware, by using the Tape Unit. This device records signals direct from the sonde onto a standard C120 tape cassette. Providing clients with logs in a form suitable for use on their computers is simply a matter of passing the cassette to the tape centre, rather than having the equivalent of a tape centre on every logging operation where computer format logs are required.

The computer tape, to be a workable information file, requires a great deal of further data about the borehole and the way the log was run. Adding this data is part of the transfer of information from cassette to reel. However, log readings on the cassette are recorded in equal time intervals, which means that, when the sonde is stationary, a number of readings can be taken with the same depth and log labels. Converting the cassette readings to a depth base, that is, filing the readings by fractions of a metre instead of fractions of a second, removes any problems which might be created by having a number of readings with the same depth label. The Visual Display Unit input console together with a TU10 tape transport and one of the PDP II computers in the tape centre are employed full time on tape conversion under the watchful eye of Irmgard Webb (Computer Operator).

Although very much in its infancy at the moment the other side of the tape centre's work, log interpretation, will become increasingly important as coal logging becomes more sophisticated.
The simpler interpretation techniques involve purely qualitative comparisons between logs from different types of detector. Using tape centre equipment considerably simplifies this operation.
Rather than dealing with paper logs, the graphics unit can be used to display any number of traces from the same hole, provided the logs are on store in the Computer's memory. A number of similar traces from different boreholes in the same area can also be displayed simultaneously, simplifying the preparation of cross-section maps of a coal field's geology. Pressing the right buttons will dump the graphics display onto the high speed plotter, enabling log prints or complex overlays to be transferred to a permanent paper record at 3" per second.

Although qualitative interpretation is a useful first step in analysing log data, increasing experience with the performance of logging equipment, and the confidence imparted by the growing opportunity to prove log results, have brought quantitative techniques into more widespread use.

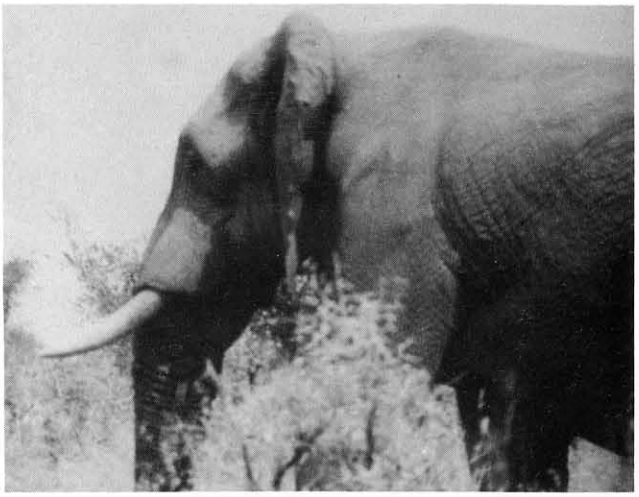
Ian and Martin have developed programs capable of carrying out quantitative analysis and producing, via the graphics unit, basic coal lithology presentations, listing the percentage composition of coal seams and their surrounding rocks in terms of carbon, moisture and ash, for the seams; and sand, shale and porosity (the gaps between the rock grains) for the rocks. Evaporite lithology presentations, applying the same principles to potash deposits, have also been produced. Programs for preparing our own depth based logs, from initial time based tapes, prior to this type of analysis, are now in regular use.

Individual logs, density, verticality and sonic to name three current examples, can be made to produce more comprehensive information when other facts about the borehole in which they were run are used to adjust and correct the log output.
A program for producing corrected density logs is complete and working. Similar sonde data corrections are permitting compressive strength indices to be compiled from sonic sonde readings, and the graphics unit, using a program built round verticality sonde readings, can now draw a '3D' representation of a borehole.

WIRE LINE is reliably informed that TLS will give 'early priority to the problem of automatic boundary interpretation, essential for most subsequent analysis programs, and work will continue on deconvolution techniques to enhance the vertical resolution of various log curves, principally gamma and density'.

The analysis and interpretation side of TLS has only been operational since January '78, but the range of techniques developed so far seem to be establishing computer treatment of log data as an important part of BPB's service capability.

LOGGING IN GOD'S COUNTRY



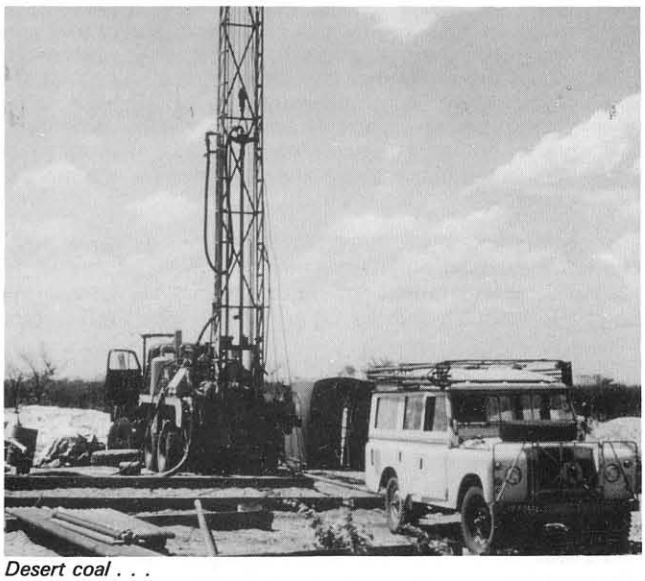
John Pasley has recently moved to a new post as Equipment Manager in East Leake after almost four years in Pretoria, latterly as manager of South African operations. Tim Smith, Nick Reade and Eric Marshall, all ex-South African engineers, are also in England at present. WIRE LINE seized the opportunity to produce this report on SAF.

Since 1973 BPB Instruments SAF has been running a number of logging units servicing major coal exploration programmes in the Republic of South Africa. Working mainly in the Transvaal and Orange Free State provinces, the majority of the units are employed by Shell Coal and BP, although a large number of logging jobs have been undertaken for other companies like the South African Coal conglomerate Transnatal.

The main base and office accommodation is sited in Pretoria, about 30 miles north of Johannesburg and the majority of logging jobs are undertaken within about 200 miles of the main base. Two satellite bases, one in Swaziland and another in Botswana covered operations further afield, mainly for Shell Coal, for a few years. One logging unit still works full time in Botswana from a camp run by Seismograph Services, a British company employed on drilling work by Shell Coal but the Swaziland base has recently been closed.

The Botswana camp moves every two months or so to follow the drilling crews around vast blocks of exploration territory, so the camp where the logging unit is housed can be anything from 300 to 700 miles from Pretoria.

Logging operations are almost exclusively directed at the location and assessment of new coal reserves for eventual opencast mining, although the Transnatal company carries out some drilling and logging projects in connection with the extension of its existing underground mines.



Desert coal . . .

BPB'S gallant crew work a 3 or 4 week rotation, either in the Botswana camp or driving from borehole to borehole in the current exploration areas, sleeping in drilling camps or at small hotels in the nearest 'dorps' — Africaans for one street town. Back in Pretoria several of the engineers share a 'communal flat' though some of the older hands have made their own arrangements — the celebration pictured right took place in the garden of Edgar Hullat's pied-a-terre.

Although the garden might look lush, the engineer's working environment is the flat, savannah land of the Transvaal veld, surroundings which induce, after a while, a peculiar sort of lethargy. Hence the term "God's Country", applied ironically by the original settlers to the semi-desert scenery, beneath which lies most of Southern Africa's coal. The vista is relieved by the character and incident to be found in small hotels like the Settler's Hotel, near Warmbads. A delightful little place according to Tim Smith's description, run by, believe it or not, a retired Scots officer. Its bar, usually well populated, always picks up after 4.30 or so when the proprietor slumps to the floor with clockwork accuracy, muttering "Gentlemen, the bar is now . . . open . . . to the public".

BPB SAF relaxes . . .

At the Settler's, if you want dinner with your bed and breakfast, you pop into the kitchen and cook it yourself! Unlike the well staffed Grand Hotel in Heidelburg. When Tim arrived there the owner called a 'boy' to carry his bags, "and through the door marked PRIVATE: KITCHEN came this lad, hastily pulling on a porters jacket. This same lad, resplendent in the same jacket adorned with a purple sash, showed me to my table, served my food, brought my wine, guided me manfully to my room and awoke me next day with my early morning cup of tea. He also carried my bags out and cleaned the truck before I left."

Hotel living and veld scenery is interspersed with sightseeing trips to the Kruger National Game Park and Cape Town, amongst other places. Sea and sun is provided by the nearest coast 400 miles away from Pretoria, at Durban. Nick Reade's animal snapshots were taken on one such field leave trip to the Kruger Park. He also took some photographs, worthy of the BBC's Natural History unit, of giraffe and zebra in the wild. WIRE LINE was defeated in an attempt to print them by the effectiveness of the animals' camouflage. Nick is willing to show the snaps to anyone who can't believe that giraffe and zebra look like trees!

HELLO SAILOR

I didn't think we had much chance of winning but the experience was crucial.

My first race as crew in a 16ft. Enterprise Racing dinghy was on the newest and longest reservoir in the U.K. — Rutland Water in Leicestershire.

The day was inevitably black and foreboding with a force 4 (gusting to 6) wind, lashing rain squalls about and producing 5ft. high waves 2 to 300 yards offshore. I had no idea what this meant, either, until the morning practice session left me gasping, aching, cold (despite a wet suit) and just a little curious where we had been, since the first douse of spray as the bow crashed back in to the water be-fogged my specs for the rest of the trip.

There were only 399 other competitors in the race, started in class groups in a very elegant fashion by the firing of a gun from the Committee (Judges') boat and lowering of an appropriate flag. The night before had been spent carefully colouring-in, with the kids 'felt tips', a page ripped from the course rules (6 pages!) to give easy identification of our start flag. Despite its plastic case, the all-important 'info' was now a soggy mass in the bottom of the boat. As a result we crossed the line 50 yards behind the rest.

As the distance out from the start line increased so did the wave height, the wind and the 'leanout' and muscular energy necessary to keep the boat upright. Very wet, very sweaty and diabolically strenuous! It was encouraging to see others in the same situation single-handing trapeze equipped boats until the truth dawned — we had been lapped in the first lap of a 3 lap race!

The wind and waves continued to insist that if we completed the course it would be by sheer luck and the comparative calm of the down-wind leg gave time for baling out the gallons of water washed over the side.

In the midst of a complex tactical discussion ("which side of that marker?" "Don't know" "Follow the rest") it went quiet. The helm (captain) had fallen over the side! The next five minutes were like turning a go-cart round on the M1. Fast, expensive pieces of boat passed either side within inches accompanied by suitable rude verbal comments about rights of way, as I battled to go-about to pick him up. My having succeeded, he obliged by capsizing the boat while getting in, which produced an over-enthusiastic rescue boat insisting we abandoned the boat to be rescued! No way. We go on. Only to capsize again!

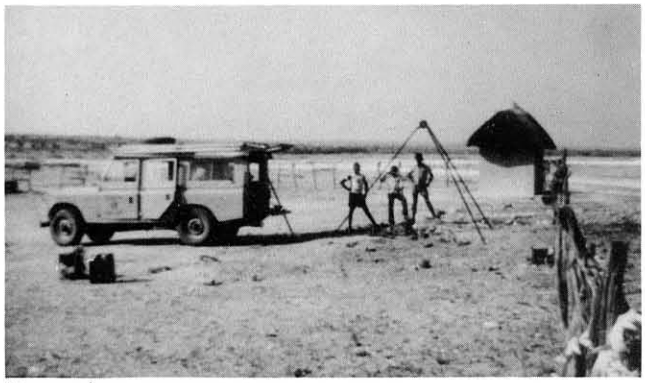
Showing 'em how . . .

Nothing for it now but a pit-stop at the nearest bank to bale out. It only took 15 minutes, by the time the wind had finished battering me about the head with the boom, and in that time the flashier boats completed the course.

No matter, sail serenely back to the club-house and "show 'em how" in the second race. Several hundred spectators were entertained for a further 10 minutes as we struggled to make the dinghy point in the homeward direction. The last capsize had broken the rudder! We had to resort to the ignominy of a tow-in by THAT rescue boat ("What you again?") and as he released the tow line near the bank, I asked "how deep's the water?" "Not very" was the reply and I swept over the side to pull us in through 8 feet of water!

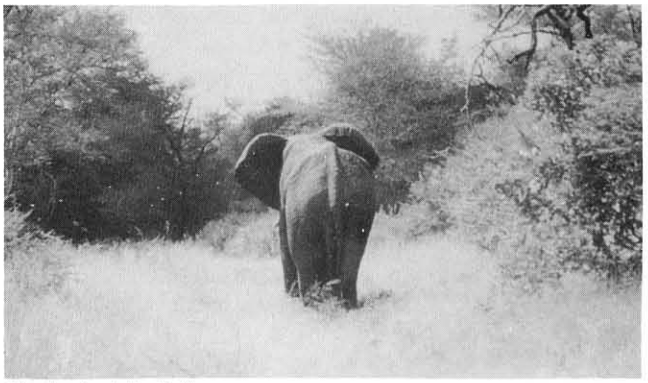
W.J. PARKHOUSE

Sailing isn't always like this
Anyone, with experience or without, interested in forming a Sailing Club at East Leake — contact Jim Parkhouse



Savannah scenery . . .

Social life in SAF revolves around sport. Despite South Africa's lack of pubs, Rugby Union and cricket fanatics abound. 90,000 rugby experts attend games in Pretoria's main Stadium and an 800 miles round trip to watch a match is a regular event. Though none of the BPB engineers play rugby or cricket, John Butler and Steve Faithfull are squash players, Edgar Hullat sails and plays an irregular game of golf, and Pete Maxwell is a member of a local archery club.



The back of the bull . . .

Stefan Samociuk prefers the somewhat less sociable sport of cycling. He once attempted to ride from Cape Town to Pretoria round the coast, a distance of around 2,000 miles, and WIRE LINE hopes to persuade him to tell us all about the trip in a later edition. BPB employees have some unusual pastimes, but WIRE LINE is sure that Stef is unique in being the only saxaphone playing member of staff to ride a bike from Cape Town to Durban!

WIRE LINE COMPETITION

The last edition of WIRE LINE exercised the imagination of most of the company's well known wits. Around half a dozen printable suggestions for a caption were received and popular acclaim elected Iain Dison's caption 'I'll never find another ewe', if not the most polite, at least the most amusing of the entrants. As promised, Iain has been duly certified and should be able to find a piece of paper proclaiming the event somewhere in his in-tray.

This edition's prize for the most appropriate caption is not a month's holiday for two in the Seychelles. It is in fact a picture of Her Majesty Queen Elizabeth II, printed on a jubilee, souvenir issue, one pound note.

Explanations for Mr. Vij's behaviour are expected to fill most of the next edition of WIRE LINE. In fact the photograph was taken during a power cut in one of the demountable buildings used as a drawing office during re-organisation at East Leake two years ago.

Welcome Mat

WIRE LINE greets Peter Vaughan who joins the company as a wireman from GEC Telecommunications and Gareth Williams an ex-electrician from Merthyr Tydfil who is now a assistant in the workshop. UKL has added Paul Sands and Dave Francis to its ranks as Trainee Engineers and Peter Constance has taken up residence as a log preparation assistant in the logging cabin fresh from a tour of America with the Oxford and Cambridge Shakespeare Company.

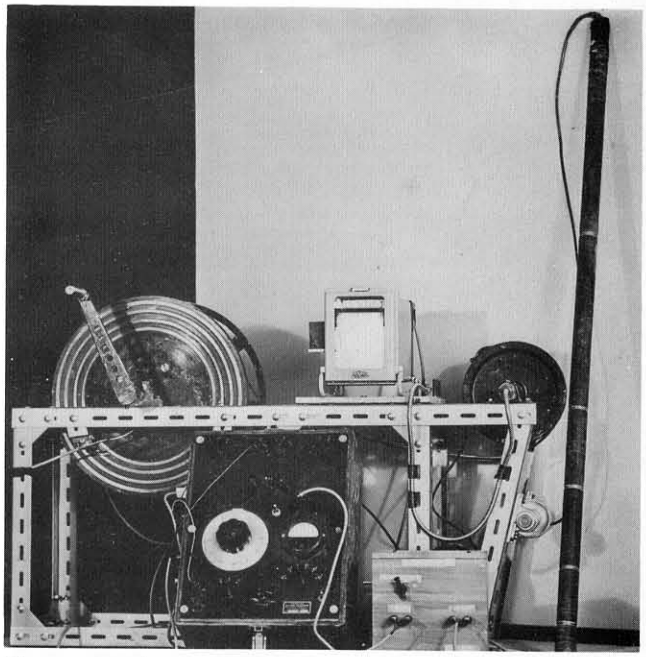
Where Are They Now?

More news on the whereabouts of staff members

Geoff Grace is now managing the recently opened base in Evansville, U.S.A. **Stan Schlesinger** is currently working in SAF. **Tim Smith** and **Nick Reade** have both taken up assignments in UKL Deepmines. **Paul Trigger** and **Richard Smith** are temporarily in Pretoria and **John Pasley,** since the last issue of Wire Line, has been assigned as Equipment Manager in the Operations department at East Leake.

MEMORY LANE

For this issue WIRE LINE has pulled from the archives a picture of one of the original BPB logging units. This rig, hand built, mostly by Dick Reeves, in the British Gypsum Research and Development Workshops at East Leake, was the first logging unit with a continuously operating chart recorder. Despite the fact that the winch was hand cranked it was capable of operating down to a few hundred feet. The electric sonde in the picture — a totally unfocussed forerunner of the FE — had two disadvantages, a tendency to float (even though it was made of tufnel rather than wood like its predecessors) and a habit of diverting its current through the arm of the person cranking the winch whenever it left the water. When the picture was taken the logger was almost the ultimate in sophisticated geophysical exploration equipment.



Those were the days!

NEXT ISSUE: WIRE LINE hopes to publish its first article from a foreign correspondent — Mick Chaplin. Other budding reporters are asked to submit their articles before mid-August.

WIRE LINE invites copy from all BPB Instruments employees, wherever they are based. Its resources are limited and, unless it gains the support of overseas bases, it will become a magazine dominated by activity at East Leake. Please send any photographs or stories which you would like to see in the next edition to Martin Curran at East Leake. Subject matter does not have to be work oriented — WIRE LINE hopes to make its pages as full of variety and interest as the characters and interests of the people who form the Company.

BPB INSTRUMENTS Ltd., East Leake, Near Loughborough, Leicestershire, England.