OCCASION

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18686

ARL _FISONS_
Applied Research Laboratories

DPS Course given
at ZISCO
Training Centre, Redcliff

The following subjects have been treated :

Monday 20 February   1989

The working principle of the computer

- The CPU and the working memory
- The bit-structure, binary coding, machine language
- The different ways of data coding
- The Mass storage devices. The properties of the different systems.
- Data organisation of diskettes and Winchester disks
- The UNIBUS structure
- Peripheral units and their way of communicating with the CPU

Tuesday 21 February   1989

The structure of an operating system

- The file organisation
- The Monitor and the overlay modules
- The different file types

The structure of the DPS

- The functions of the Monitor
- The analytical data files
- The working routines

Details of the analytical data files and analytical functions

- Files SYS.STM and *.PRG
- The functions of the data file editor
- Setting up an analytical programme to read element intensities.
- Practical exercise at the Quantometer

Wednesday 22 February 1989

Details of the analytical data files and analytical functions (continued)

- The definition and signification of accuracy and precision, spectral background, limits of detection
- Practical determinations with the use of the DPS
- The principle of Drift Correction and its implementation in the data files
- Discussion of existing files in the laboratory

Thursday 23 February 1989

The calibration

- The polynomial equation
- The use of the DPS Regression Calculation
- The appreciation of the polynomial coefficients and the error correlation
- Setting-up data files for Regression Calculation
- The use of an internal standard
- The 100% Normalisation
- Delimitation and segmentation of working curves

Friday 24 February   1989

Correction of interelement effects

- Types of interferences and how to determine them
- The Additive Corrections : details of the equations used in DPS, calculation of the coefficients
- The Multiplicative Corrections : details of the Lucas-Tooth and Traille-Lachance equation, calculation of the coefficients.

The Alloy Correction

- The working principle and limits of application
- Setting-up Alloy Files

The Pseudo-Element calculation
The use of Compound commands
Storing and retrieving results
Data security

3560 - Electronics Course given at ZISCO Training Centre, Redcliff

The following subjects have been treated :

Monday 27 February   *1988*

The lay-out of the instrument (where to find the different parts)

General terminology and design of the electronic circuitry

- Logic circuits, their functions and their presentation on schematic diagrams.

- Exercise of Boolean algebra

The computer Interface and Computer Adapter Board

- Input and output signals
- The address and data bus
- Coding of addresses and subaddresses

Thuesday 28 February   *1988*

The Photomutiplier Circuit

- The High Voltage Power Supply
- The High Voltage Attenuators
- The Integrator board

The Readout System

- The working principle of the Charge Converter
- The charge Converter analog board
- The charge Converter logic board

Wednesday 1 March   1989

The Readout System (continued)

- The Diagnostic and Control Board
- The Diagnostic Analog Circuits
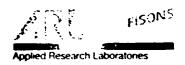- The grating Lamp Control

Thursday 2 March   1989

The UNISOURCE

- The different exitation conditions and their application
- The working principle of the UNISOURCE
- The timing circuit for condition switching

Friday 3 March   1989

The UNISOURCE (CONTINUED)

- The function of the thyristor circuits
- The ignition control circuit
- The charge control circuit
- The condition programmation

72000/31000-RET Course given at ZISCO Training Centre, Redcliff

The following subjects have been treated :

Monday 6 March   /1 9 89

The circuitry of the 31//2000 instruments

- The control panel
- The safety circuits
- The read-out circuits

Tuesday 7 March   /1989

The circuitry of the 31000/72000 (continued)

- The programmer chassis
  a) the electronic control circuits
  b) the programming facilities

Wednesday 8 March   /1989

The interconnection of the Retrofit-System

- Modification of the control panel
- Modification of the safety circuit
- Modification of the charge-transfer compensation

Thursday 9 March   1989

The interconnection (continued)

- The connection of channel read-out
- The connection of analytical conditions control
- RF-noise suppression

Friday 10 March   1989

The computer interface

- The functional parts
- The communication signals
- The interrupt signals

Monday 13 march   1989

The Retrofit Rack

- The digital voltmeter
- The analog circuit
- The control logic
- Timing and adjustments

Tuesday 14 March   1989

The Retrofit Rack (continued)

- The logic of the channel decoder
- The lay out of the circuitry
- Timing of the channel read-out

Wednesday 15 March   1989

The Retrofit Rack (continued)

- Programming and decoding the analytical conditions
- The ACO decoder circuitry

Thursday 16 March   1989

Testing and troubleshooting the Retrofit

- The testprogramme
  - Programme loading
  - The different functions

Friday 17 March   1989

Testing and troubleshooting

- Practical use of the testprogramme on 31000 and 72000
- Interpretation of test results
- Final discussion

No 09
SERVICE REPORT

WEEKLY SUMMARY OF EXPENSE REPORTS
FOR WEEK ENDING ....

INSTALLATION SERVICE UNDER GUARANTEE/NOT UNDER GUARANTEE   INSP.   REV.   ANAL. ASS.   SER. AGREEMENT

CUSTOMER: ZISCO STEEL   **ADDRESS:** REDCLIFF, ZIMBABWE

CUSTOMER'S ORDER NO: ....   **ARL INVOICE NO:** ....

PERSONS PRESENT: ....   **LAB CHIEF:** Mr. MAVENEKA

INSTRUMENT MODEL + SERIAL NO: 3560 - 1113 / 19011 - 1255

REASON FOR CALL OUT: ....

WORK DONE: GIVEN COURSES: DPS & 3560 ELECTRONICS

1 WEEK EACH

20 FEB — 3 MARCH 1989

PARTICIPANTS: Mr. MAVENEKA   Mrs. MAPHOSA

	" BUTAI	Mr. MUTUNGURA
SERVICE	" MUPIWA	" MAMBUME
SPARES	" DALIWAYO	" MTEMA
MANAGEMENT	" MUZENDA	" MUCHENJE
ACCOUNTS	" MAKANDA	" AKINO

ARL ENGINEER'S REMARKS:

MATERIALS USED

QTY.	PART NO.	SERIAL NO.	DESCRIPTION	C/NC	PRICE

LABOUR, TRAVELLING & LIVING

LABOUR		SAT	SUN	MON	TUE	WED	THUR	FRI	TOTAL	RATE	AMOUNT	C/NC
TIME STARTED												
TIME FINISHED												
NORMAL HOURS												
* O/T HOURS												
TRAVELLING CAR/Km												
CAR HIRE	Days											
	Km											
AIR FARE/HIRE												
LIVING												

* Overtime requested by customer and to be invoiced according to ARL Service Tariff.

CUSTOMER'S SIGNATURE _Mavenika_   **DATE** 3 MARCH 1989

ARL ENGINEER'S SIGNATURE _Horst Allidal_