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BWI KP Aerofill
Aerosol & Spray Equipment

21997

73 p. tables diagrams illus.

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Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
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FINAL REPORT

UNIDO PROJECT : MP/SUD/96/013

UNIDO CONTRACT : 96/128/VK

BWI KP AEROFILL REF : 51156E

SUDAN COSMETICS AND HOUSEHOLD PRODUCTS

CFC REPLACEMENT PROJECT

CONTENTS

1.0 Resume of project key dates up to the time of acceptance trials.

		Date
1.1	Contract award to BWI KP Aerofill	11 Sep 1996
1.2	Joint visit to site by Mrs M Sanchez of UNIDO and R.L. Russell of BWI KP Aerofill. Basic guidelines established and agreed by all parties.	13/14 Dec 1996
1.3	Amended contract signed by BWI KP Aerofill and returned to UNIDO.	12 May 1997
1.4	Technical Guidelines and proposed layouts for project completed and sent to UNIDO and project counterpart.	End May 1997
1.5	Plans received from Project Counterpart and approved.	7 July 1997
1.6	Training visit to UK by Mr Samir Shaker of Sudan Cosmetics. (See appendix 3.1 for programme which includes inspection of equipment prior to shipment.)	28 July-1st Aug 1997
1.7	Equipment despatched to Sudan.	12 Sep 1997
1.8	Notification of arrival of equipment at Gazira factory site and report of damage to vessels and gas house. (See Appendix 3.2)	3 Feb 1998
1.9	Site visit by R L Russell to inspect goods and status of engineering work being carried out by Project Counterpart. (See Appendix 3.2)	6-10 Feb 1998
1.10	Arrival of site team to perform following tasks: (a) Measurement of vessel thicknesses and report to manufactures. (See Appendix 3.2) (b) Commence installation of tank farm. (c) Commence installation of filling line.	26 Feb-19 Mar 1998

Confirmation of acceptance of vessels by manufacturer (See Appendix 3.2).
Completion of installation and commissioning of tank farm and sprinkler protection of vessels.

Training Counterpart staff in the handling of flammable liquids.
See report.

	Receipt of first load of LPG by Project Counterpart staff supervised by BWI KP Aerofill team.	
1.11	Second visit by site team to complete commissioning of the line, training of personnel and to conduct proving trials in presence of UNIDO representative. Refer to report Section 2.0.	26-30 April

Section 2.0 Report on Installation, Commissioning and acceptance phases.

2.1 First Visit 26 February to 19 March

2.1.1 General

Because of the very long delay already in proceeding with the installation phase an action plan had been formulated jointly by BWI KP Aerofill and Sudan Cosmetics and proposed to UNIDO whereby a set on minimum requirements for the building and services would be completed by February 26th to allow the visiting team to proceed with the installation of the plant.

These requirements were:

(a) Completion of building shell and main factory floor to allow installation of the filling line.
(b) Completion of concrete base for propellant filling room.
(c) Completion of tank farm civil engineering work.
(d) Provision of temporary electrical mains supply to the production building.
(e) Provision of temporary compressed air supply to the production building. These activities were completed by the time the team arrived on site and all the major items of equipment were placed in position already by Project Counterpart Engineers, including the propellant filling room, LPG vessels and destench columns .

2.1.2 Filling Line

The installation of the filling line proceeded without major problem and the line was basically ready for commissioning by the end of the visit.

2.1.3 Tank Farm

The first task in the tank farm because of the damage to the storage vessels which had occurred in transit was to carry out a series of thickness measurements on the vessel shells and relay this information to the vessel manufacturers for analysis. An ultrasonic thickness measuring unit was brought from the UK by the team and the required measurements taken and faxed to the UK. Together with the data already in their position concerning the size and location of the damage the manufacturers were able to give an opinion quickly on the suitability of the vessels and they cleared the vessels for use and the tank farm installation was continued through to completion (See Appendix 3.2).

2.1.4 Tank Farm Sprinkler System

The sprinkler system was designed and installed by Sudan Cosmetics and comprised a large buffer tank connected via float valves to the main factory water storage tank and connected via two high flow centrifugal pumps to arrays of sprinkler nozzles mounted over each vessel. The pumps could be switched on either by manual control or by pressure switches mounted on the vessel shells which would automatically start the pumps when excessive pressure was detected in the vessels.

The sprinkler system was tested by manual starting and by overriding the pressure switches. The system worked successfully giving good coverage of the vessel shells.

2.1.5 Commissioning of the LPG Storage Area.

On completion of the pipework the entire system was pressure checked for leaks and was found to be leak free.
(See Appendix 3.3 for copy of Test Certificate).

The test regime consisted of pressure test for one hour, the vessels were tested to 6 bar and the pipework system to 21.5 bar.

Following the pressure test the entire system was made inert by drawing a vacuum of 0.3 bar absolute on the vessels and introducing a nitrogen into the pipework.

The system was now ready for reception of the first load of LPG and approximately 8 tonnes of LPG were delivered by bulk road tanker and transferred by Sudan Cosmetics staff working under the supervision of the BWI KP Aerofill team. The local people had first received training on the functioning and management of the plant and the hazards and safety precautions necessary for the safe handling of flammable liquified gases (See Appendix 3.4).

The commissioning of the LPG plant included the three column destenching unit and the gas quality downstream of the columns was found to be excellent.

Following the completion of the commissioning phase the LPG plant has been managed by Project Counterpart staff who regularly go through the start up and shut down procedures including starting and stopping the transfer and recirculation pumps. The gates to the compound are now locked shut outside of normal production hours.

2.1.6 Plant Safety Systems (Gas Detection and Ventilation).

The safety systems for the propellant filling room and the tank farm and their integrated control panel (The "Gas Manager") were installed and tested.

The gas detectors were calibrated and Project Counterpart received "hands on" training in the operation and regular inspection regimes relevant to the panel as a revision of the earlier training at Hayes.

During the course of the visit, problems were experienced with the gas detection battery back-up system charger unit. Essentially the charger unit should maintain a continuous charge to the system but if the input voltage to the unit fluctuates outside of certain set limits the unit will switch off and not reset itself. This was what was noticed and the conclusion supported by the experience of the local electrical engineers was that mains fluctuation exacerbated by the temporary mains connections was the cause of the problems. It was agreed that mains filters and a larger capacity charger unit would be fitted by BWI KP Aerofill during the next visit.

2.1.7 Conclusion to the visit.

A list of outstanding minor items was prepared for action during the next visit and component and product requirements for testing and for the proving runs were quantified. A list of tasks for completion by Project Counterpart engineers was agreed. The next visit was scheduled for 26th April to coincide with the availability of the UNIDO Project Officer to inspect the plant and attend proving trials.

2.2 Second Visit 26-30 April 1998

2.2.1 General Situation

The general situation on arrival was that the production building was still no more than a shell and electricity and compressed air services were still temporary.

The mixing vessels and other equipment had still not yet arrived on site because of local administration difficulties.

Availability of new cans valves and product was limited to 3000 of 53 and 57 diameter cans with valves and 1200 litres of insecticide base solution. There were some existing stocks of cans and valves but these were of doubtful quality due to their age and it was decided to use as many as possible only for initial setting up of the line.

2.2.2 Filling Line

The list of small items noted during the first visit was dealt with and the line was set up successively to run 35mm, 53mm and 57mm cans using water as the active ingredient and propellant from the bulk storage area. The Project Counterpart team were involved in these early tests to carry out size changes, to operate the line and to carry out routine quality checks such as checking crimp dimensions, fill weights and can pressure checks.

2.2.3 LPG Storage Area

From the 27 April onwards the LPG recirculation system was started up and left in service for the duration of the working day to prove the system and to stabilise propellant temperature and thus can fill weights.

It was noted that even with ambient temperatures in excess of 40°C (the vessel temperature gauges did not exceed 40°C), well within the design maximum of the vessels (65°C).

The ring main pressure was adjusted to 9 bar and this pressure was maintained consistently by the pump whether the filling line was operating or not.

2.2.4 Safety Systems

The voltage stabiliser and larger capacity charger card were installed in the gas manager. In addition a generator was installed to supply power to the aerosol plant. It was found that with this combination no further problems were experienced.

2.2.5 Proving Runs

Because of the limited amount of materials available the trial runs had to be limited to some 2,000 cans of each of 53 and 57mm diameter cans.

The product and gas fills were extrapolated from the existing CFC based formulations and were the same for both sizes of can.

The weights were calculated as follows:-

Product fill	102gm	$\pm$ 2.5gm
Propellant fill	40gm	$\pm$ 3.0gm

The line was set up using 2 product filling heads and one propellant filling head. The instantaneous operating speed was approximately 32 cans per minute.

The line ran consistently although inadequate compressor capacity was a limiting factor.

The duration of each run was approximately $1^1/_2$ hours.

Fill accuracy averaged $\pm$1.5gm for product and gas and was well within process limits.

2.2.6 Conclusions

2.2.6.1 Although the proving runs, limited by shortage of materials and components were less than ideal in duration, the line ran consistently and process variables such as fill weights and crimp dimensions were stable and very few stoppages were experienced in spite of the inexperience of the Project Counterpart line team.

It can be concluded that apart from the limitations imposed by temporary services the line meets the terms of reference criteria.

2.2.6.2 Long term reliability cannot be assessed yet but experience with other users of the "Linearpak" equipment indicate that it is very simple to operate and maintain so few problems of any significance can be expected.

2.2.6.3 The acceptance trials were also witnessed by Mr Elie Haddad the P.E.O. of Sudan Cosmetics who was satisfied with what he saw of the line in operation and a Certificate of Acceptance was produced and signed on behalf of the Project Counterpart by him and on behalf of BWI KP Aerofill by R. L. Russell. (See Appendix 3.5) for copy.

2.2.6.4 There remains much finishing work to be carried to the unit to complete the project.
The building structure must be completed and doors fitted to the large opening at the filling line end of the main building.
Further work is need to make the building more closed to the invasion of dust, although to prevent the ingress of the very fine powder which is omnipresent in Sudan will not be possible.
The dust free finishes to the walls and floor as outlined in the initial visit report dated 15th December 1996 must be applied.
Appropriate room ventilation must be installed to reduce the high room tempartures experienced during the installation and commissioning stages.
The extraction system to the filling machine and test bath must be completed by the installation of a ventilator fan which is now on site.
The mixing area and services have to be installed as permanent facilities:
Building lighting is required.

Also notices warning of the flammable gas hazard and indicating "No Smoking" must be fixed in the appropriate areas.
Externally the access roadway for the bulk tanker must be finished and the ground surrounding the LPG storage area must be leveled and cleared of rubble.

2.2.6.5A set of general views showing the site conditions at the time of commissioning is attached (See Appendix 3.6).

Report Prepared by R.L. Russell
Dated: 5.8.98

R L Russell

TRAINING

MR S M SHAKER

SUDANESE COSMETICS & HOUSHOLD PRODUCTS LTD

28th JULY - 1st AUGUST 1997

AGENDA

MONDAY 28th JULY 1997

a.m. - T Barter

Introduction and agenda presentation

- Review weeks Agenda
- Factory tour
- Line presentation and overview
- Gas house layout

p.m. - . P Gates / P Davies

Operator training - Linear Pak

- How to run machine
- Start up
- Changeover
- Basic set ups
- Gas manager operation
- Gas sensor calibration

TUESDAY 29th JULY 1997

a.m. - P Gates / R Sidhu

Operator training - Test Bath

- How to run machine
- Start up
- Changeover
- Basic set ups

p.m. - R L Russell

LPG equipment

- LPG storage vessels and pumpsets
- LPG pipework and fitting
- Destenching equipment
- Safety aspects

WEDNESDAY 30th JULY 1997

a.m. - R Sidhu

Maintenance Training - Linear Pak

- Product head operation
- Product head stripdown
- Product head basic set up and fault finding
- Linear Pak general maintenance housekeeping

p.m. - R Sidhu

Maintenance training - Linear Pak

- Crimper head operation
- Crimper head stripdown
- Crimper head basic set up and fault finding
- Linear Pak general maintenance

Appendix 3.1

THURSDAY 31st JULY 1997

a.m. - R Sidhu

Maintenance training - Linear Pak

- Propellant head operation
- Propellant head stripdown
- Propellant head basic set up and fault finding

p.m. - R Sidhu / B Tarrant

Maintenance Training - Test bath/ Gas detection system

- Test bath routine maintenance / housekeeping
- Gas sensor calibration

FRIDAY 1st AUGUST 1997

a.m. - T Barter

Equipment stripdown and re-assembly

- Equipment markings to layout
- Conveyor connections and re-connection
- Pipework connections and reconnection
- Gas house positioning and lifting
- Gas house tunnel positioning
- Installation/commissioning discussion

p.m. - to be advised

Free agenda

Appendix 3.1

APPENDIX 5

BWI KP Aerofill

Aerosol & Spray Equipment

BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181-848 4501
Fax: 0181-561 3308

FAX TRANSMISSION - FAX MESSAGE NO - FAX TRANSMISSION

To: BWI KP AEROFILL

Fax No. 00.44.181 561 3308

Attn: Mr C. McNeill
cc. DEVR, R.C. T.B, T.P. P.D.

Date: 06.02.98

From: R.L. RUSSELL
GUEST ROOM #504.

No.of pages 4. (including cover)

Ref: SUDAN COSMETICS.

PRELIMINARY DAMAGE REPORT

1.0 GAS HOUSE

The gas house has sustained the following damage.

1.1 The primary and secondary ventilation stubs protruding from the gas house have both been badly damaged and new sections will need to be made and fitted on site. ACTION T.B. URGENT

Internally the ventilation is undamaged.

2. The external emergency stop (button) switch is damaged and must be replaced.

ACTION TB / P.D.

1.3. The outer walls on two facing sides (the sides with the ventilation and conveyor tunnel openings on) have been superficially dented in the outer layers.

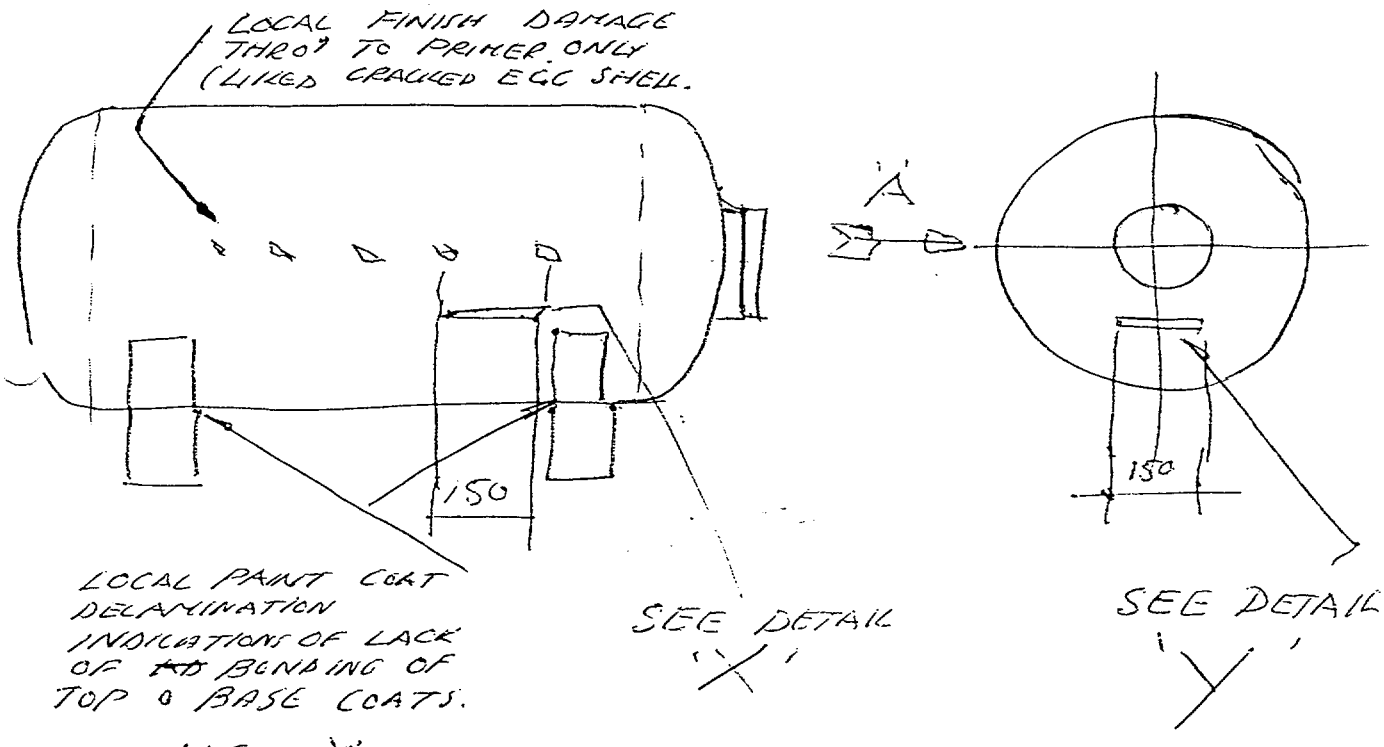
and the framework is scratched.
The inside panels show no signs of damage.

ACTION TO BE DECIDED. There is no effect on the equipment function.

2.0 STORAGE VESSELS SERIAL NOS 20278 & 279

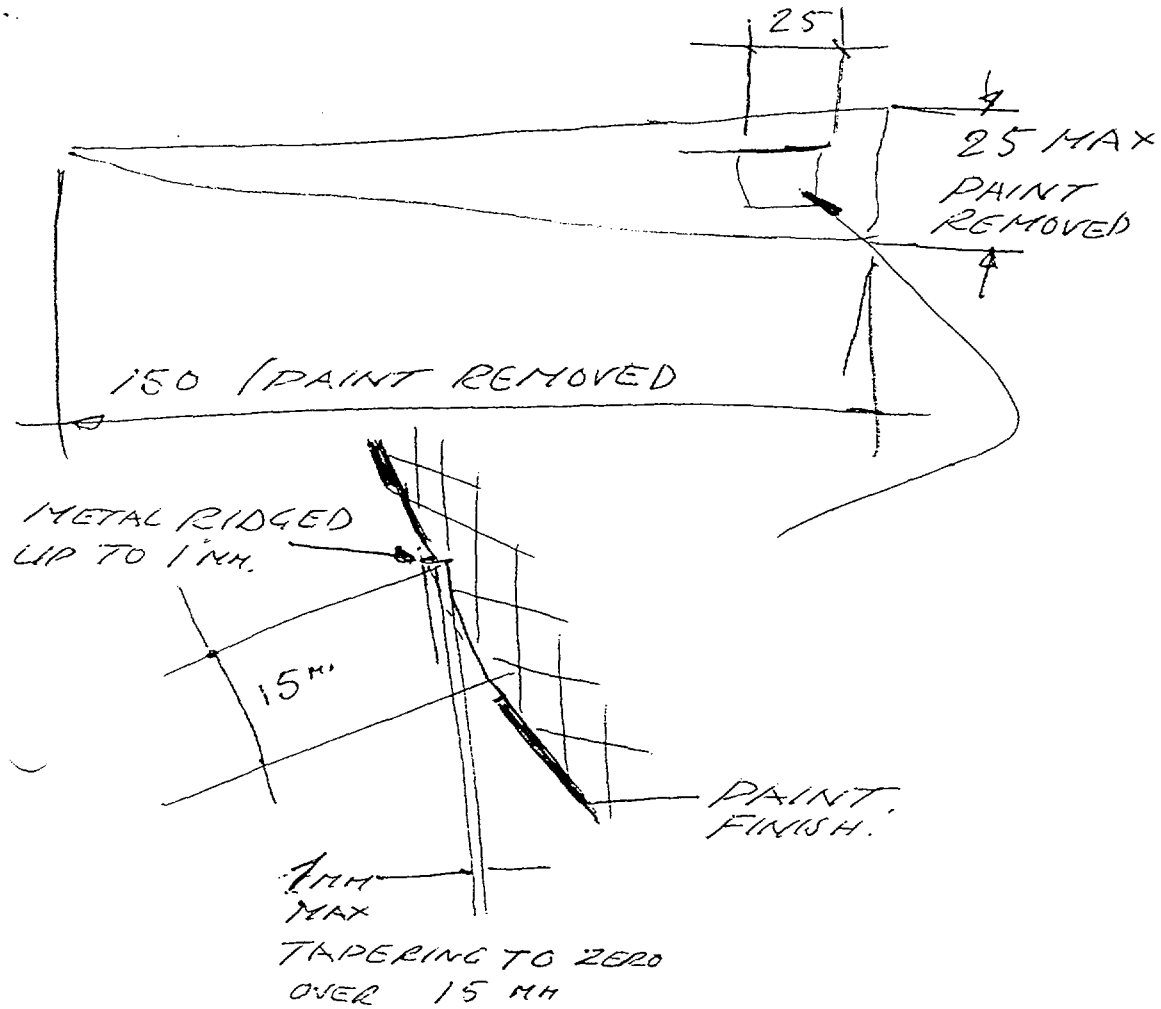
2.1 Both vessels show evidence of heavy handling at some stage. However the damage appears to be superficial, there is no evidence of shell distortion. Details of the nature and extent of the damage to individual vessels is given below.

2.2 VESSEL 20278

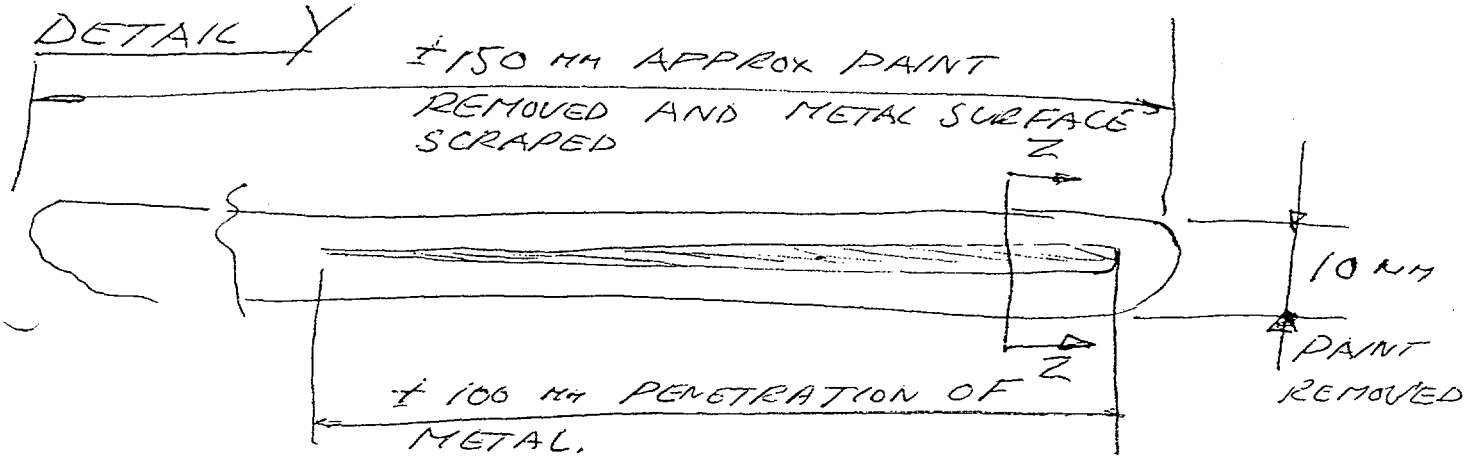


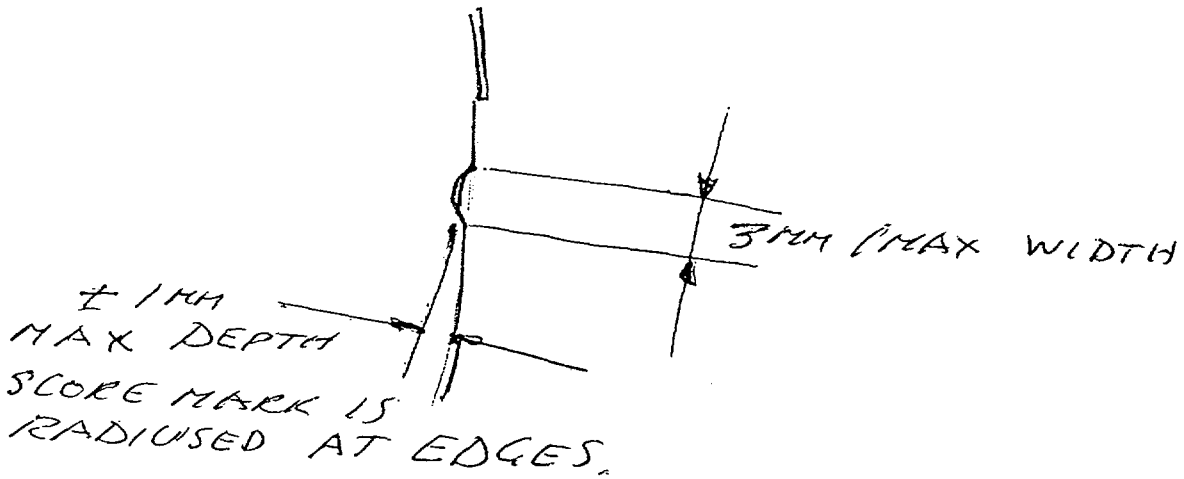
VIEW 'A'

DETAIL X



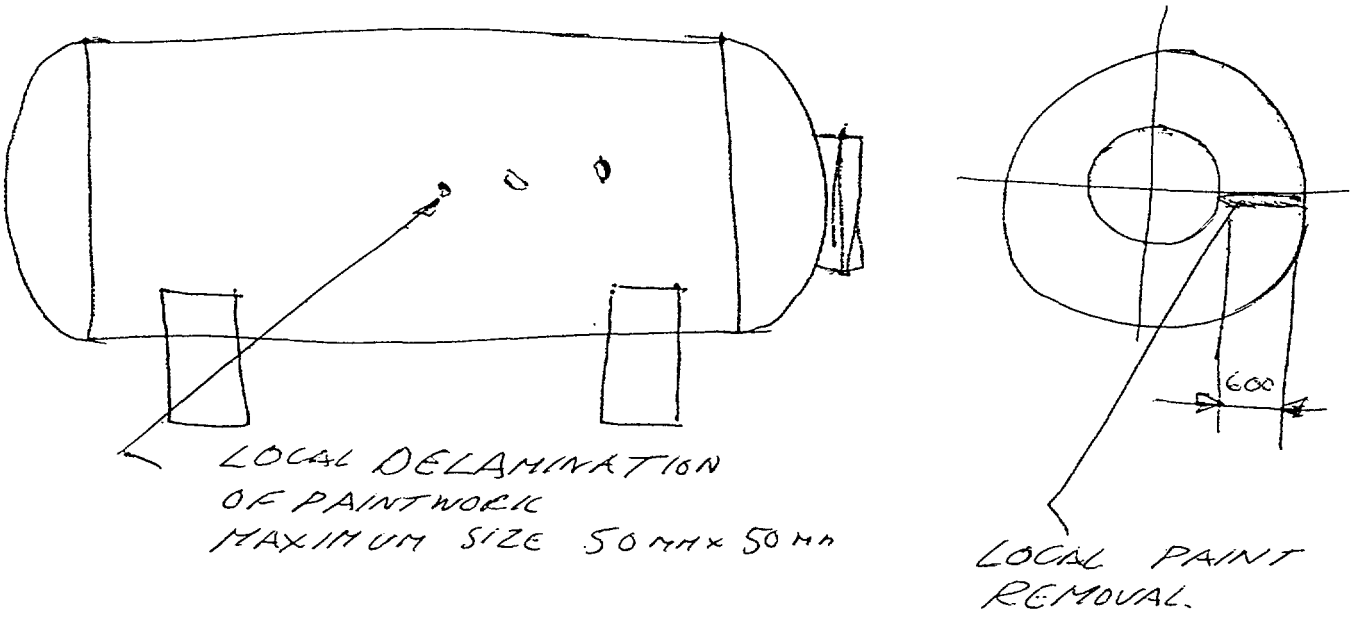
DETAIL Y





2.3 VESSEL 20279

There is local paint delamination through to the primer coating.
There is no evidence of scoring or abrasion of the shell



2.4 GENERAL REMARK ON VESSEL FINISH

2.4.1 There is some evidence of localised delamination caused by poor bonding as well as the damage caused ~~by~~ during transit / loading / off loading. This is not extensive and is confined mainly to the saddle to barrel area.

RL Russell

06.02.98.

FROM : transintra Sudan Ltd PHONE NO. : 249 11 776842 Nov. 24 1997 10:28AM P0

transintra Sudan Ltd.

FAX

Reference :— JJ/1783/97

KHARTOUM 24/11/97

Number of Pages (2)

TO : K.C.H Shipping

Attention : Mr. Ali

CC :

From Jack Javes – Transintra

Subject Damage on piece Delivered to Jayair

pls find herewith the comments on the waybill.

pls investigate and clarify to us extend of damages and if possible an estimate.

we want to pay the driver but we will hold until we hear from you.

Awaiting your urgent response / comment

B.R

Jack Ja

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Appendix 3.2

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No. 3344/97 A

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TO : ELBAGEIR
VIA :

Means of transportation TRUCK NO: G-2397 ELBARAKA

For account of UNIDO C/O: JACK JAMES - KHARTOUM.
To be delivered to : ELBAGEIR ELY HADDAD FACTORY FOR MEDICENS

GAINST PAYMENT OF OUR MANIFEST NO: 240

MARKS	No. of pack./	PARTICULARS	GROSS WEIGHT
	01	UNIT HYDROCARBON FILLING ROOM	4500 KGS.
		EX: M/V: TIAN LIN	
		B/L:NO: 1508	19.22^{M^3}
		FILE NO: 04/2112	
		LAST PART FOR THIS FILE	
		FIRST PART SEE W/B 3331/97	
		FREIGHT PAY ABLE AT KHARTOUM	
		Ls.200000= paid in advance at P2U	
Received the Unit upon ① Emergance [illegible] ② Ventilation Duct also Damaged		استلام البضاعه من على ظهر الشاحنه على مسئوليه صاحب الشأن في خلال ٢٤ ساعه تبدأ بعد يوم من وصول الشاحنه ماعدا الجمع والعطلات الرسميه ماعدا ذلك أي تأخير على مسئولية المستلم.	

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Report No. 52/97

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Applicants are recommended to give notice of damage and shortage to the carriers.

/AN.

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		1508
Booking Ref.	Shipper's Ref.	F/Agents Ref.

Shipper
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3/35 CLAYTON ROAD
AYES MIDDLESEX UB3 1RU
NITED KINGDOM

Consignee
ESIDENT REPRESENTATIVE OF THE UNITED NATIONS
EVELOPMENT PROGRAMME
INDP)
EPUBLIC OF SUDAN

Notify Address
UDANESE COSMETICS AND HOUSEHOLD PRODUCTS LIMITED
. O. BOX 2304 KHARTOUM
UDAN
EL: 24911/780224
R ELIE HADDAD

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Marks & Nos. Container No.	Number and kind of packages: description of goods	Gross weight	Measurement
NITED NATIONS E' .OPMENT PROJECT NIDO OFFICE KHARTOUM NIDO PROJECT NO: P/SUD/96/013 ONTRACT NO: 96/128 UNIDO HARTOUM OS. 1-4	FOUR(4)PIECES STB:- 2 STORAGE VESSELS FOR LIQUID PROPANE BUTANE 1PORTABLE FILLING ROOM 1 DESTENCH COLUMN SET UNIDO CONTRACT NO. 96/128 PROJECT NO. MPSUD/96/013	23,014 KGS	

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One original Bill of Lading must be surrendered duly endorsed in exchange for the goods or delivery order.
IN WITNESS whereof the Master of the said Vessel has signed the number of original Bills of Lading stated below, all of this tenor and date one of which being accomplished, the others stand void.

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Applicable only when document used as a Through Bill of Lading.	Freight payable at LONDON	Place and date of issue LONDON **02-SEP-97**
	Number of original Bs/Lading THREE(3)	Signed for and on behalf of THE CARRIER — CAPE NAVIGATION LINE
CONDITIONS OVERLEAF		ESTUARY MARITIME LTD. — LINE MANAGERS

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HAYES, MIDDLESEX	BUYERS REFERENCE	SELLERS REF
UB3 1RU ENGLAND	MP/SUD/96/013	51156/51157E

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SHIPPING MARKS:	NO & KIND OF PACKAGES	TOTAL GROSS	TOTAL
CONTAINER NUMBER	DESCRIPTION OF GOODS	WT (KG)	CUBE
UNITED NATIONS DEVELOPMENT PROJECT UNIDO OFFICE KHARTOUM UNIDO PROJECT MP/SUD/96/128 CONTRACT NO: 96/128 UNIDO KHARTOUM NOS 1-4	4 PIECES	23014	114-267M3

TOTAL NET WT (KG)
22834

ITEMS	DESCRIPTION	QTY	OTHER DETAILS
1	20M3 CAPACITY HORIZONTAL CYLINDRICAL OVERGROUND PROPANE RATED STORAGE VESSELS COMPLETE WITH VALVES AND FITTINGS	2	ITEMS 1 AND 2 MEAS: 5227 X 2586 X 3250 CMS GR.WT 8490KG EACH
2	DESTENCH COLUMN ASSEMBLY COMPRISING THREE COLUMNS COMPLETE WITH INLET AND OUTLET CONNECTIONS PURGE FACILITY, LIQUID DRAIN, SAMPLE POINTS, PRESSURE GAUGE,THERMOMETER SAFETY RELIEF VALVE,FILLING (MEDIA) CONNECTION.	1	ITEM 3 ONE WOODEN CASE MEAS: 168X155X276 CMS GR.WT: 1534 KG NT.WT : 1434 KG
3	HYDROCARBON FILLING ROOM COMPLETE WITH LINEAR PAK GASSING BASE FITTED WITH NOZZLE ADAPTORS 058-07-00 AND 35 MM CHANGE PARTS.	1	ITEM 4 MEAS: 310 X 200 X 310 CMS. GR WT: 4500KG NT WT :4420KG

UNIDO PROJECT NO : MP/SUD/96/128
CONTRACT NO : 96/128

NAME OF SIGNATORY

SIGNATURE

Consignor : المرسل : 1

M/S BWI KP AEROFILL
33-35 CLAYTON ROAD
HAYES, MIDDLESEX
UB3 1RU, ENGLAND

K 480768

ORIGINAL

Consignee's ref. 51156/51157E 4

Consignee : المرسل اليه 2

RESIDENT REPRESENTATIVE OF THE UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP) REPUBLIC OF SUDAN. BUYER :- UNITED NATIONS IND DEVELOPMENT ORGANISATION (UNIDO)
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A-1400 VIENA AUSTRIA

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CERTIFICATE OF ORIGIN

Originated In : منشأها : 5

UNITED KINGDOM

Method of Transport : مرسلة بواسطة : 3

SEAFREIGHT

Remarks : ملاحظات : 11

Marks and Numbers : الأرقام والعلامات :	Quantity and Kind of Packages : كمية ونوع الطرود :	Description of Goods: مواصفات البضاعة :	Weight (gross & net) : الوزن (الصافي والاجمالي) : 6
ADDRESSED TO UNITED NATIONS DEVELOPMENT PROJECT UNIDO OFFICE KHARTOUM UNIDO PROJECT NO : MP/SUD/96/013 CONTRACT NO: 96/128 UNIDO KHARTOUM NOS: 1-4	2 STORAGE VESSELLS FOR LIQUID PROPANE BUTANE.# 1 PORTABLE FILLING ROOM ## 1 DESTENCH COLUMN SET ### UNIDO CONTRACT NO: 96/128 PROJECT NO: MP/SUD/96/013	GR WT : 23014KG NT WT : 22834KG

MANUFACTURERS :- # BEEL INDUSTRIAL BOILERS PLC PO BOX 148
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BWI KP AEROFILL 33-35,CLAYTON ROAD,HAYES,
MIDDLESEX, ENGLAND, UB3 1RU
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HANGS VALLEY
CHAMBER OF COMMERCE & INDUSTRY
- 9 SEP 1997
HEATHROW AIRPORT

CERTIFIED BY
10 SEP 1997
غرفة التجارة العربية البريطانية
Arab-British Chamber of Commerce
AUTHORISED SIGNATORY

غرفة التجارة العربية البريطانية
ARAB-BRITISH CHAMBER OF COMMERCE

مكان وتاريخ الاصدار
Place and Date of Issue

Issuing Authority سلطة الاصدار

861

Arab-British Chamber of Commerce

13-OCT-1997 08:33 FROM BWI KP AEROFILL TO 0024911773218

بسم الله الرحمن الرحيم

AN INSURANCE & REINSURANCE CO. LTD.
Head Office : Khartoum

شيكان للتأمين وإعادة التأمين المحدودة
المكتب الرئيسي - الخرطوم

MARINE POLICY

DATE :- 17/09/97

MARINE POLICY NO. 683/97.

NAME OF INSURED :- BWIKP AEROFILL .UNIDO CONTRACT NO.96/128
PROJECT NO.MP/SUD/96/013

IN FAVOUR OF :-

VESSEL :- TIANLIN.

VOYAGE FROM :- ANY EUROPEAN SEA PORT. TO :-KH. VIA PORT SUDAN.

SUBJECT MATTER INSURED :-
AEROSOL CAN FILLING EQUIPMENT.

*SUM INSURED U.S 170,619 AT EXCH. RATE :- 1.00

(C&F 0.10 %) 187,681

(ONE HUND.EIGHTY SEVEN THOUSAND SIX HUND.EIGHTY ONE US.DOLLARS)

PREMIUM:- US 2,362.09

MAR.	1.0000 %
WAR.	0.0275 %
O_AGE.	0.1250 %
TRANS.	0.0000 %
EXTN.	0.0000 %

TERMS & CONDITIONS:- THIS INSURANCE COVER IS SUBJECT TO THE FOLLOWING CLAUSES & NOTICE ATTACHED:-
1-IMPORTANT NOTICE.2-CANCELLATION ENDORSEMENT.3-PORT DELAY CLAUSE 4-INSTITUTE CARGO CLAUSE "A".5-INSTITUTE STRIKES CLAUSE CARGO. 6-INSTITUTE WAR CLAUSE CARGO.7-DOCUMENTATION OF CLAIMS.8-SURVEY REPORT.9-WARRANTED PROFESSIONALLY PACKED11-EXCLUDING.RUSTING OXIDATIO DENTING BREAKAGE OF CAST IRON , MECHANICAL &ELECTRICAL DERANGEMENT .

THIS POLICY IS SUBJECT TO :-
A-LIABILITY EXCLUSION CLAUSE "B" 1.12.90.
B-INSTITUTE RADIOACTIVE CONTAMINATION EXCLUSION CLAUSE 1.10.90.
C-WAR RISK DATED 1.1.82.

SALE INVOICE / LA FACTURE / DIE RECHNUNG

BWI KP Aerofill
Aerosol & Spray Equipment
3-35 Clayton Road
Hayes
Middlesex
UB3 1RU
England
Telephone: 0181 848 4501
Facsimile: 0181 561 3308
Bankers: Midland Bank plc.
Manchester Area Branch, P.O. Box 360
100 King Street, Manchester M60 2HD
Account No. 21594087 Sort Code: 40-31-24
V.A.T. Reg. No. GB 579 48 48 68
Commodity Codes: 8422 30 00 Machines
8422 90 90 Parts for above

INVOICE NUMBER 7866DA

DATE/TAX POINT 8-9-97

CUSTOMER A/C No. -

INVOICE TO:
UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANISATION
(UNIDO) PO BOX 300
WAGRAMSTRASSE 5, A-1400
VIENNA, AUSTRIA

DELIVER TO:
RESIDENT REPRESENTATIVE
OF THE UNITED NATIONS
DEVELOPMENT PROGRAMME
(UNDP)
REPUBLIC OF SUDAN

AREA

CUSTOMER ORDER No. 15-6-128H

OUR ORDER No. 51156/51157E

ITEM NUMBER	PART NUMBER	DESCRIPTION	UNIT MEAS.	INVOICED QUANTITY	QUANTITY TO FOLLOW	UNIT PRICE	TOTAL
.	-	PROVISION OF SERVICES AND SUPPLY OF EQUIPMENT AND PARTS RELATED TO THE PHASING OUT OF THE USE OF CFCS AT SUDANESE COSMETICS AND HOUSEHOLD PRODUCTS LTD IN THE REPUBLIC OF SUDAN. PART SHIPMENT UNIDO PROJECT NUMBER: MP/SUD/96/013 ACTIVITY CODE 0730D PAYMENT D AS DEFINED IN CONTRACT NUMBER 96/128 SECTION 5.05 ITEM A	-	XXXXXXX	XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXX

THE CURRENCY OF THIS INVOICE IS UNITED STATES DOLLARS

PAYMENT TO BE MADE TO OUR US DOLLAR ACCOUNT AS FOLLOWS:
A/C NUMBER 37542117 MIDLAND BANK PLC. INTERNATIONAL DIVISION EC4
PO BOX 181, 110-114 CANNON STREET LONDON EC4 6AA, SORT CODE 40 05 15.

...SIONS	No. & TYPE OF PACKAGES	GROSS WEIGHT	NET WEIGHT	PACKING & DELIVERY CIF/FOB
	--	--	--	

...ING MARKS	METHOD OF DESPATCH	DESPATCH No.	DESPATCH DATE	TERMS OF SALE
	-- --	--	--	-- --

A - CC 10 ... 1997

p.p. BWI KP Aerofill
Aerosol & Spray Equipment

TOTAL ~~GBP~~ USD	--
VAT@ %	--
INVOICE TOTAL ~~GBP~~ USD	--

SALE INVOICE / LA FACTURE / DIE RECHNUNG

INVOICE NUMBER 7866DA

KP Aerofill
Aerosol & Spray Equipment
lyton Road Telephone: 0181 848 4501
Facsimile: 0181 561 3308
Bankers: Midland Bank plc.
Manchester Area Branch, P.O. Box 360
100 King Street, Manchester M60 2HD
Account No. 21594087 Sort Code: 40-31-24
V.A.T. Reg. No. GB 579 48 48 66
Commodity Codes: 8422 30 00 Machines
8422 90 90 Parts for above

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DATE/TAX POINT 8-9-97

CUSTOMER A/C No. -

AREA

CUSTOMER ORDER No. 15-6-128H

OUR ORDER No. 51156/51157E

PART NUMBER	DESCRIPTION	UNIT MEAS.	INVOICED QUANTITY	QUANTITY TO FOLLOW	UNIT PRICE	TOTAL
-	ITEMS SHIPPED ON THIS CONSIGNMENT	-		-	US DOLLARS	
	STORAGE VESSELLS FOR LIQUID PROPANE BUTANE *		2	0	34,504.05	69,008.10
-	PORTABLE FILLING ROOM **		1	0	19,478.60	19,478.60
-	DESTENCH COLUMN SET ***		1	0	74,715.00	74,715.00
	MANUFACTURES BEEL INDUSTRIAL BOILERS PLC.PO BOX 148 BECOR HOUSE,GREEN LANE ,LINCOLN,ENGLAND,LN6 7DN BWI KP AEROFILL 33-35 CLAYTON ROAD,HAYES,MIDDX ENGLAND,UB3 1RU OLD PARK PROGAS (UK) LTD.WOODS LANE CRADLEY HEATH, WARLEY,WEST MIDLANDS,ENGLAND-B64 7AN.				TOTAL THIS SHIPMENT USD	163,201.70
					50% DUE AGAINST DOCUMENTS USD	81,600.85

WITHOUT PREJUDICE
CERTIFIED BY
10 SEP 1997
British Chamber of Commerce
AUTHORISED SIGNATORY

S	No. & TYPE OF PACKAGES	GROSS WEIGHT	NET WEIGHT	PACKING & DELIVERY
TO PACKING LIST	4 PIECES	23014KG	22834KG	CIF/FOB

MARKS	METHOD OF DESPATCH	DESPATCH No.	DESPATCH DATE	TERMS OF SALE
TO PACKING	SEAFREIGHT	--	AUG 97	PAYMENT (D) CONTRACT 96/128

TOTAL GBP	81,600.85
VAT@ %	
CE TOTAL USD	81,600.85

p.p. BWI KP Aerofill
Aerosol & Spray Equipment
AUTHORISED SIGNATORY

A-BOX 10 SEP 1997 THAILAND

Report No. 52/97

SCHEDULE

NOTE: It is the responsibility of the Assured to separate the damaged packages from the sound. In case of shortage, Lloyd's Agent should state if possible, in addition to the following details, the invoiced and landed weights of the goods, and weight at the time of survey.

Marks and Numbers	No. of Packages	Description of Goods	Quantities Sound	Quantities Missing or Damaged
UNITED NATIONS DEVELOP-MENT PROJECT UNIDO PFFICE KHARTOUM UNIDO PROJECT NO: MP/SUD/ 96/013 CONTRACT NO:96/128 UNIDO KHARTOUM NOS. 1-4	4 (FOUR) UNITS.	2 STORAGE VESSELS FOR LIQUID PROPANE BUTANE, 1 PORTABLE FILLING ROOM, 1 DESTENCH COLUMN SET.	SEE	BELOW.

NARRATIVE REPORT

At Applicants' request and in their presence, a survey was held on 3 (Three) Units ex the above consignment.

The above 3 units were checked and inspected by the surveyor and the following are his findings :-

Hydrogarbon Filling Room Mark BWI KP Aerofill Serial No.51156:
2 (Two) exhaust ducts badly bent, ducts to be replaced.
Emergency switch broken, switch to be replaced.
Front side dented and scratched, to be repaired.
Rear lower side scratched, to be repainted.

Storage Vessel for Liquid Propane Butane Serial No. 20279:
Lower side scratched, to be repainted.
Top right hand side scratched, to be repainted.
2 (Two) brackets scratched, to be repainted.
5 (Five) valves missing.

Storage Vessel for Liquid Propane Butane Serial No. 20278:
Front side dented and scratched, to be repaired.
Right hand side dented and scratched, to be repaired.
Rear side scratched, to be repainted.
5 (Five) valves missing.

.../6..

Signature of Lloyd's Agent

APPENDIX 2.

LLOYD'S

SCHEDULE C

Should any of the information called for in this report not be available, the reason for the omission should be stated

Report No. 52/97

®

STANDARD FORM OF

SURVEY REPORT (GOODS)

for use by LLOYD'S AGENTS and SUB-AGENTS only

This report is issued for use in connection with the claim against the parties responsible, but does not imply that the loss is recoverable from Underwriters. This must depend upon the terms of the Policy of Insurance.

1.—*(a)* Name of consignee of goods as specified in annexed Schedule.	*(a)* Resident Representative Of The United Nations Development Programme (UNDP), Khartoum.
(b) Name of applicant for survey (if not Consignee please specify relationship).	*(b)* Messrs. Elie Industries Company Limited, P.O.Box No. 2304, Khartoum.
(c) Name/Registration Number of Vessel/Aircraft/Conveyance from which goods discharged.	*(c)* M.V. "TIANLIN".
(d) Port/airport/place of discharge and date of arrival...	*(d)* PORT SUDAN on 27th. Sept., 1997.
(e) Date goods landed at port/airport/place of discharge...	*(e)* 29th. September, 1997.
(f) If transhipped, name/registration number of original carrying vessel/aircraft/conveyance and port/airport/place of transhipment.	*(f)* Not transhipped.
(Note—If goods lightered please give details under 'Further remarks' on schedule.)	
2.—*(a)* In whose custody were the goods held between time of discharge and delivery to place where survey held?	*(a)* Port Authority.
(b) Where and what storage was afforded to the goods during this period.	*(b)* Sea Ports Corporation Stores according to storage facilities, rendered by port authorities.
3.—*(a)* Were goods transported by road or rail or by other means from port/airport/place of discharge to place where survey held?	*(a)* By Road.
(b) If so, give date of commencement of transit and date of arrival at place of survey.	21st. November, 1997. *(b)* 24th. November, 1997.
(c) Give name of carrier for each transit...	*(c)* Transintra Sudan Ltd.

Appendix 3.2

4.—*(a)* What records/receipts were issued at time of discharge and up to delivery to consignee and what exceptions if any were noted at each stage?	*(a)* Delivery Order, Outturn Receipt.
(b) Condition of goods when finally delivered	*(b)* See Schedule.
(c) If there was any delay in taking delivery of goods, state consignees reasons.	*(c)* Reason not given.
5.—*(a)* If goods transported in container, please state type, number, marks and type of transit, e.g. LCL, FCL or house to house.	*(a)* Not applicable.
(b) Was container seen by surveyor before or after being de-stuffed?	*(b)* - do -
(c) Was seal inspected by surveyor? ... ... (State number and condition.)	*(c)* - do -
(d) If not seen, state by whom it was removed... ...	*(d)* - do -
(e) Where and by whom was container de-stuffed? ...	*(e)* - do -
(f) Condition of container and cargo at that time ...	*(f)* - do -
Note—If not seen by surveyor state condition as reported by any other party, e.g. de-stuffing depot or consignee and name the party concerned.	
6.—*(a)* Date of application for survey	*(a)* 25th. November, 1997.
(b) Date and place of survey...	*(b)* 25th. November, 1997. Applicants' Factory at El Bageir.
(c) If there was any delay in applying for survey, state consignees reasons.	*(c)* No delay.
7.—*(a)* Description and condition of interior and exterior packing	*(a)* Unprotected.
(b) Was packing new or second-hand?	*(b)* Not applicable.
(c) Was packing customary?	*(c)* - do -
Note—If in the surveyors opinion the packing was not adequate for this transit. give full explanation under 'Further remarks'.	
8.—*(a)* Description of loss/damage	*(a)* Bending, denting, breakage and scratching.
(b) After examination, cause attributed by surveyor to...	*(b)* Apparently to handling during transit.
(c) In case of water damage, state whether salt water, freshwater or sweat, and whether salt water contamination test was carried out.	*(c)* Not applicable.

9.—*(a)* Is Lloyd's agent aware of any casualty/accident suffered by the carrying vessel/aircraft/conveyance to which loss/damage found might be attributable?	*(a)* No.
(b) If so, give details	*(b)* Not applicable.
(c) Was a Master's Protest lodged or any other form of notification given to the appropriate Authorities?	*(c)* No.
10.—*(a)* Have Bill of Lading/CMR/Air Waybill or other documents of carriage been inspected? (If so, give date and number of bill and whether original or copy.)	*(a)* Yes, photo copy Cape Navigation Line Bill of Lading No. 1508 dated 2nd. September, 1997 at London.
(b) What is the reference therein to the conditions of goods?	*(b)* Clean.
—Has the commercial invoice been inspected? (If so, give Invoice No., date and amount.)	Yes, Invoice No. 7866DA dated 8th. September, 1997 for USD 163,201.70
12.—On the date of compromise of damage agreed with consignee or of disposal sale, the arrived sound market value amounted to (State whether duty paid or in Bond.)	Not applicable.
13.—In the interest of all parties concerned, the damage has been assessed by way of compromise and a fair and reasonable allowance on arrived sound market value has been agreed amounting to	Not applicable.
14.—No compromise being agreed with consignee, the damaged goods were, with our approval, and the consent of the consignee, sold by public sale or private tender for account of the consignee. The proceeds, as per attached sales account, amounted to	Not applicable.
15.—*(a)* Duties payable on goods in a sound state are ...	*(a)* Duty paid in full.
(b) In view of the loss/damage, has the consignee applied for a rebate of duty and with what result?	*(b)* No.
16.—*(a)* Has consignee given notice of loss/damage to or made a claim against ship/airline/railway, other carriers or bailees? (If not, what reason does consignee give.)	*(a)* No. Damage discovered later.
(b) Date on which consignee states goods delivered into his custody.	*(b)* 24th. November, 1997.

(c) Date on which consignee gave notice of loss/damage or made a claim and to whom addressed.	*(c)* Not applicable.
(d) Summary of reply if received	*(d)* - do -
(e) Was a joint survey by carriers/bailees and consignee held? If so, on what date and where?	*(e)* No.
(f) Name of other surveyor(s) and by whom appointed	*(f)* Not applicable.
17.—Rate of exchange on date of sale or agreement as to loss was (Local currency to currency of invoice.)	Rate to be checked with the Bank.
18.—Name of surveyor appointed by the Lloyd's Agent. (Please state if surveyor is member of the Lloyd's Agent's staff.)	Sayed/ AbuObeida A/Azim memer of Lloyd's Agents' Staff.

FURTHER REMARKS. Note: If there has been any delay in holding survey or in issuing this report, the reasons must be stated below.

Signature of surveyor.

Certified correct and approved and issued without prejudice and subject to the terms, conditions and amount of the Policy of Insurance.

PLACE Khartoum, DATE 1st. December, 1997

The following fees have/~~have not~~ been paid by the applicant for survey:—
(Delete whichever does not apply.)

Agency fee
Surveyor's fee
Expenses& Trans. £s. 3,000.-
Administrative Charge

Total £s. 203,000.-

For, GEZIRA TRADE & SERVICES CO. LTD.

Signature of LLOYD'S AGENT(S).
LLOYD'S AGENTS

APPENDIX 2.

PACKING LIST

SHEET NO : 1

M/S BWI KP AEROFILL	INVOICE NUMBER	DATE
33-35 CLAYTON ROAD	7866DB	12-9-97
HAYES, MIDDLESEX	BUYERS REFERENCE	SELLERS REF
UB3 1RU ENGLAND	15-6-128H	51156/51157E

CONSIGNEE

RESIDENT REPRESENTITIVE OF THE UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP) REPUBLIC OF SUDAN

BUYER (IF NOT CONSIGNEE)

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION (UNIDO) PO BOX 300 WAGRAMSTRASSE 5, A-1400 VIENNA,AUSTRIA

SHIPPING MARKS: CONTAINER NUMBER	NO & KIND OF PACKAGES DESCRIPTION OF GOODS	TOTAL GROSS WT (KG)	TOTAL CUBE
UNITED NATIONS DEVELOPMENT PROJECT.UNIDO OFFICE KHARTOUM.UNIDO PROJECT NO: MP/SUD/96/013. CONTRACT NO: 96/128 UNIDO KHARTOUM NOS1-31	ONE 40" CONTAINER NUMBER; KNLU 4287461 SEAL NO: B404073. 31 PIECES	7567KG TOTAL NET WT (KG) 6817KG	41-722M3

ITEMS	DESCRIPTION	QTY	OTHER DETAILS
10	AFL 50 TEST BATH (1520)	ONE	CASE NO 1 MEAS: 343X114X194 CMS GR WT:924KG NT WT:
13	GAS MANAGER CONTROL CABINET (INNER BAG NOT OPENED APPEARS OK)	ONE	CASE NO 2 ✓ MEAS : 234X88X79 CMS GR WT : 338KG NT WT 304KG
4	LINEAR PAK PRODUCT BASE FITTED WITH 35MM CHANGE PARTS BAG OPENED OK		CASE NO 3 ✓ MEAS: 145X87X181 CMS GR WT: 329 KG NT WT: 296KG
14	ELECTRICAL WATER HEATING UNIT WITH RECIRCULATING PUMP CASE OPENED OK	ONE	CASE NO 4 ✓ MEAS: 214X132X61CMS
4B	VACUUM PUMP O.K	ONE	GR WT: 401KG ✓ NT WT : 360KG
10A	TEST BATH DRIVE UNIT FITTED WITH 35MM CHANGE PARTS BAG OPENED AND UNIT INSPECTED	ONE	CASE NO: 5 ✓ MEAS: 181X110X196 CMS GR WT : 832KG NT WT : 719KG

UNIDO CONTRACT NO : 96/128
PROJECT NO: MP/SUD/96/013

NAME OF SIGNATORY

COLIN MCNEILL

SIGNATURE

PACKING LIST CONTINUATION

SHEET NO :

M/S BWI KP AEROFILL	INVOICE NUMBER	DATE
33-35 CLAYTON ROAD	7866 DB	12-9-97
HAYES, MIDDLESEX	BUYERS REFERENCE	SELLERS REF
UB3 1RU ENGLAND	15-6-128H	51156/51157E

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ITEMS	DESCRIPTION	QTY	OTHER DETAILS
-	OFF LOAD PUMP ASSEMBLY	ONE	CASE NO: 6
-	TRANSFER PUMP ASSEMBLY	ONE	MEAS: 249X205X153CMS
-	PROCESS PUMP ASSEMBLY	ONE	GR WT : 1157KG
-	LPG PIPE WORK SECTIONS	FOUR	NT WT: 1025KG
	CASE OPENED OK		
-	1.5" 300# BALL VALVES	9	CASE NO:7
-	2" 300# BALL VALVES	7	MEAS:226X113X110CMS
-	2" HD 200 BALL VALVES	2	GR WT: 1091 KG
0.5	~~1.5" HD 200 BALL VALVES~~	6	NT WT : 980KG
- 0.75	1.5" HD 200 BALL VALVES	8 2	
-	1" HD 200 BALL VALVES	2	28
-	DUO PORTS / S.R.V.'S	2	
-	CONTENTS GAUGES	2	
- 2	1" NON RETURN VALVE	1	
-	TEMPERATURE GAUGES	5	
-	1.5" ACTUATOR BALL VALVE	1	
-	2" ACTUATOR BALL VALVE	1	
- 2	3 3/4 ACME FILL COUPLING	1 2	
- 2	2 1/4 ACME VAPOUR COUPLING	1 2	
- 2	H.R.V.'S	20	
-	HOSE ADAPTORS	4	
-	3/4 " ULLAGE VALVE	2	
-	PRESSURE GAUGES	8	
-	JOINTS FOR VESSEL	1 SET	
-	VAPOUR HOSE	1	
-	LIQUID HOSE	1	
-	4 VENT STACK C/W RAIN CAPS	1 SET	
-	BOLTS	1 SET	
-	JOINTS	1 SET	
-	BRACKETS	1 SET	
-	EARTHING STRAPS	1 SET	
-	LPG PIPEWORK SECTIONS	16	
19	GANTRY WITH TWO EXTRACTION MOTOR/ FAN ASSEMBLIES	ONE	CASE NO.8
	CASE OPENED OK.		MEAS:186X99X84CMS
			GR WT : 290KG
			NT WT :260KG

PACKING LIST CONTINUATION

SHEET NO :

M/S BWI KP AEROFILL	INVOICE NUMBER	DATE
33-35 CLAYTON ROAD	7866DB	12-9-97
HAYES, MIDDLESEX	BUYERS REFERENCE	SELLERS REF
UB3 1RU ENGLAND	1506-128H	51156/51157E

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION (UNIDO) PO BOX 300, WAGRAMSTRASSSE 5, A-1400, VIENNA,AUSTRIA

ITEMS	DESCRIPTION	QTY	OTHER DETAILS
4A	PRODUCT RAM AIR CYLINDER ASSEMBLY MOUNTED ON WHEELED TROLLEY CASE OPENED. O.K.	ONE	MARKED 10 CASE NO:9 MEAS:69X59X148CMS GR WT :120KG NT WT : 108KG
5A	CONVEYER TUNNEL	ONE	CASE NO:10 MARKED 8
1	CONVEYER IDLER UNIT	ONE	MEAS : 308X72X148CM
2	1220 CONVEYOR	ONE	GR WT : 420 KG
3	45 DEGREES CONVEYOR BEND	ONE	NT WT 388KG
9 CASE	1520 CONVEYOR SECTION	ONE	
11 OPENED	2440 CONVEYOR SECTION	ONE	
8 A O.K	U-RETURN CONVEYOR SECTION	ONE	
24	CABLE TRAY LENGTHS	26	
5	LINEAR PARK BRIDGING SECTION	ONE	
12	SIDE TRANSFER DRIVE UNIT	ONE	CASE NO:11 MEAS:112X66X120CMS
22	CONVEYOR SUPPORT LEGS CASE OPENED O.K	THREE	GR WT : 130 KG NT WT 117KG
20	DUCTING SECTIONS CASE OPENED O.K.	FOUR	CASE NO :12 MARKED 9 MEAS : 94X82X173CMS GR WT 90 KG NT WT 81KG
21	TRANSPORT CHAIN GUIDES O.K	TWO	PACKAGE NO: 13 1 BUNDLE MEAS: 420X30X30CM GR WT : 85KG NT WT: 80KG

PACKING LIST CONTINUATION

SHEET NO :

M/S BWI KP AEROFILL	INVOICE NUMBER	DATE
33-35 CLAYTON ROAD	7866 DB	12-9-97
HAYES, MIDDLESEX	BUYERS REFERENCE	SELLERS REF
UB3 1RU ENGLAND	15-6-128H	51156/51157E

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION (UNIDO), PO BOX 300, WAGRAMSTRASSE 5,A-1400, VIENNA AUSTRIA

ITEMS	DESCRIPTION	QTY	OTHER DETAILS
15	WATER HEATING ELECTRICAL CONTROL CABINET ON PALLET IN CARD BOARD BOX O.K.	ONE	CASE NO:14 MEAS:120X100X90CM GR WT : 160KG NT WT: 144KG
18	1 BOX CONTAINING		
	CONVEYER CHAIN	2 ROLLS	
	35-45MM 45 DEGREES BEND CHANGE PARTS	1 SET	
	41-50MM 45 DEGREES BEND CHANGE PARTS	1 SET	
	CAN TRANSPORT CHAIN	2 ROLLS	
	53MM TEST TANK CHANGE PARTS	1 SET	
	57MM TEST TANK CHANGE PARTS	1 SET	
	53MM LINEAR CHANGE PARTS	1 SET	OK
	57MM LINEAR CHANGE PARTS	1 SET	
	SETTING BLOCK	ONE	
17	ELECTRICAL SPARES AS PER ATTACHED FOUR (4) PAGES		
-			
-	6KG DRY POWDER EXTINGUISHER	THREE	CASE NO:15
	9KG DRY POWDER EXTINGUISHER	TWO	MEAS:70X60X60CM
	REFILL CHARGE AND POWDER 6KG	THREE	GR WT:60KG
	REFILL CHARGE AND POWDER 9KG	TWO	NT WT:55KG O.K
16	MACHINE SPARES AS PER ATTACHED ONE PAGE	ONE SET	
	GAS HOUSE AND CONVEYER SYSTEM TECHNICAL MANUALS	TWO	
	UNIVERSAL TEST BATH TECHNICAL MANUAL	TWO	
	LINEAR PAK MULTI FUNCTIONAL IN LINE INDEXER TECHNICAL MANUAL	FOUR	
	4X1.5 SWA STRANDED AEI CABLE	40M	PACKAGE NO:16 1 PALLET
	3X1MM CY GREY CABLE	25M	MEAS: 150X120X90CM
	4X.75MM YY BLUE CABLE	30M	GR WT:390KG
	4X1.5 CY GREY CABLE	25M	NT WT :370KG
	2,0.75MM YY BLUE CABLE	100M	
	3X1.5 SWA STRANDED AEI CABLE	100M	
6944 1.1.1.1	4X1.5 SWA STRANDED AEI CABLE	500M	
	7X1.5 SWA STRANDED AEI CABLE	30M	

PACKING LIST CONTINUATION

SHEET NO :

M/S BWI KP AEROFILL	INVOICE NUMBER	DATE
33-35 CLAYTON ROAD	7866DB	12-9-97
HAYES, MIDDLESEX	BUYERS REFERENCE	SELLERS REF
UB3 1RU ENGLAND	15-6-128H	51156/51157E

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION (UNIDO) PO BOX 300 WAGRAMSTRASSE 5, A-1400, VIENNA, AUSTRIA

ITEMS	DESCRIPTION	QTY	OTHER DETAILS
	12X1.5 SWA STRANDED AEI CABLE	60M	CE40105
	19X1.5 SWA STRANDED AEI CABLE	100M	
	3X1MM CY GREY CABLE	50M	
	4X1.5 MM CY GREY CABLE	10M	
	2X0.75MM YY BLUE CABLE		
	LPG PIPEWORK SECTIONS	15	ITEMS 17 TO 31 GR WT : 750KG NT WT : 740KG CUBE: 3.0 M3
	CE 40129	10mtr	
	CE 40110 GREEN YELLOW 10MR	100mtrs	

Sudan Cosmetics - Electrical Spares 5113GE Page 1.

COMPONENT NUMBER	COMPONENT DESCRIPTION	LINE NO	OP NO	UNIT MEAS	MAN PUR	STANDARD USAGE	WASTE %	TOTAL USAGE	PER	QUANTITY ON HAND	BILL OF MATERIAL NARRATIVE
5113GEYE	GAS HOUSE ELECTRICS										
CE10406	24/1020 FLP HEATER 1.5KW 240V EEXD SINGLE PHASE			EA	P	1.0000	0.00	1.0000	1	0.00	
CE10407	GLAND FOR EEXD HEATER 24/1020			EA	P	1.0000	0.00	1.0000	1	0.00	
CE10312	GHG 210 5000 +0003 [illegible] LIGHT SWITCH			EA	P	2.0000	0.00	2.0000	1	2.00	
CE10601	3 WAY LED INDICATOR RED,AMB,GN GHG411[illegible]/4R0102			EA	P	1.0000	0.00	1.0000	1	1.00	
CE10703	BRASS PLUG M20 TYPE EEXD			EA	P	3.0000	0.00	3.0000	1	6.00	
CE19701	TERMINAL BOX ASSY-HAZARDOUS			EA	D	2.0000	0.00	2.0000	1	0.00	
CE19808	SWA 16/M20 GLND WO L/N BK			EA	D	4.0000	0.00	4.0000	1	0.00	
[illegible]8	SWA 20S/M20 GLND WO L/N BK			EA	D	6.0000	0.00	6.0000	1	0.00	
CE1[illegible]38	SWA 16/M20 GLND CW L/N BK			EA	D	2.0000	0.00	2.0000	1	0.00	
CE19843	SWA 20S/M20 GLND CW L/N BK			EA	D	6.0000	0.00	6.0000	1	0.00	
CE19870	UT 16/M16 GLND WO L/N BK			EA	D	1.0000	0.00	1.0000	1	0.00	
CE19891	UT 16/M20 GLND CW L/N BK			EA	D	9.0000	0.00	9.0000	1	0.00	
CE29202	TERM BOX KL1001 (40 BLUE (TRNS)			EA	D	1.0000	0.00	1.0000	1	0.00	
CE40101	3 X 1.5 SWA STRANDED ACI CABLE			M	P	12.0000	0.00	12.0000	1	223.00	
~~CE40102~~	~~4 X 1.5 SWA STRANDED ACI CABLE~~			~~M~~	~~P~~	~~40.0000~~	~~0.00~~	~~40.0000~~	~~1~~	~~880.00~~	
CE40108	3 X 1MM UT GREY CABLE			M	P	5.0000	0.00	5.0000	1	130.00	
~~CE40110~~	~~3 X 1MM UT GREY CABLE~~			~~M~~	~~P~~	~~25.0000~~	~~0.00~~	~~25.0000~~	~~1~~	~~402.00~~	
~~CE40118~~	~~4 X 0.75MM TT BLUE CABLE~~			~~M~~	~~P~~	~~30.0000~~	~~0.00~~	~~30.0000~~	~~1~~	~~254.00~~	
~~CE40129~~	~~4 X 1.5MM UT GREY CABLE~~			~~M~~	~~P~~	~~25.0000~~	~~0.00~~	~~25.0000~~	~~1~~	~~200.00~~	
~~CE40131~~	~~2 X 0.75MM TT BLUE CABLE~~			~~M~~	~~P~~	~~100.0000~~	~~0.00~~	~~100.0000~~	~~1~~	~~830.00~~	
CE40426	M20 BLUE PLASTIC SHROUD GLAND			EA	P	9.0000	0.00	9.0000	1	85.00	
CE49401	M16 BLUE GLAND CW L/NUT			EA	D	3.0000	0.00	3.0000	1	0.00	
CE49402	M20 BLUE GLAND CW L/NUT			EA	D	13.0000	0.00	13.0000	1	0.00	
CE49403	PG7 BLUE GLAND CW L/NUT			EA	D	6.0000	0.00	6.0000	1	0.00	
CE59001	EM. STOP BOX 40mm COMPLETE			EA	D	6.0000	0.00	6.0000	1	0.00	
CE70002	11090 TROJAN DOOR SWITCH			EA	P	2.0000	0.00	2.0000	1	4.00	
[illegible]101	8039A DIFF. AIRFLOW SWITCH			EA	P	2.0000	0.00	2.0000	1	2.00	
CE[illegible]006	THERMOSTAT IP54 MODEL 3121 -20C TO +30C (EMBERLE)			EA	P	1.0000	0.00	1.0000	1	0.00	
CE79301	GAS HOUSE DOOR LOCK SWITCH			EA	D	2.0000	0.00	2.0000	1	0.00	
CE99301	CATALYTIC DETECTOR ASSY			EA	D	3.0000	0.00	3.0000	1	0.00	
5113GEY6	GAS MANAGER ELECTRICS										
4383410	MOSAIC TILE			VEA	P	1.0000	0.00	1.0000	1	20.00	
CE10001	KFD2-SRZ-EX2.W 2 RELAY O/P (3/3/4)			EA	P	7.0000	0.00	7.0000	1	20.00	
CE10019	PR-02 POWER RAIL (31842)			EA	P	1.0000	0.00	1.0000	1	5.00	
CE10022	KFD2-SR2-EX1.W 1 RELAY O/P			EA	P	1.0000	0.00	1.0000	1	3.00	

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COMPONENT NUMBER	COMPONENT DESCRIPTION	LINE NO	OP NO	UNIT MEAS	MAN PUR	STANDARD USAGE	WASTE %	TOTAL USAGE	FEM	QUANTITY ON HAND	BILL OF MATERIAL NARRATIVE
CE19866	CT 16/M20 GLND WO L/N BK			EA	B	2.0000	0.00	2.0000	1	0.00	
CE19868	CT 16/PG11 GLND WO L/N BK			EA	B	3.0000	0.00	3.0000	1	0.00	
CE19870	CT 16/PG16 GLND WO L/N BK			EA	B	3.0000	0.00	3.0000	1	0.00	
~~CE30447~~	~~50MM CABLE TRAY 50C/50/E7~~			~~EA~~	~~P~~	~~10.0000~~	~~0.00~~	~~10.0000~~	~~1~~	~~10.00~~	
~~CE30448~~	~~4" CABLE TRAY ART/100MM~~			~~EA~~	~~P~~	~~6.0000~~	~~0.00~~	~~6.0000~~	~~1~~	~~6.00~~	
~~CE30449~~	~~6" CABLE TRAY ART/150MM~~			~~EA~~	~~P~~	~~10.0000~~	~~0.00~~	~~10.0000~~	~~1~~	~~12.00~~	
CE30454	TRAY COUPLERS ART07			EA	P	16.0000	0.00	16.0000	1	40.00	
CE30468	M6 X 16 NUTS & BOLTS TCU616			EA	P	200.0000	0.00	200.0000	1	200.00	
CE30484	WOOD SCREW ... 1" X NO 10 RD ROUND HEAD			EA	P	100.0000	0.00	100.0000	1	100.00	
CE30485	RAWLPLUGS - 1 1/2"XNO.8 SCREWS			EA	P	100.0000	0.00	100.0000	1	200.00	
~~CE40101~~	~~3 x 1.5 SWA STRANDED ALT CABLE~~			~~M~~	~~P~~	~~100.0000~~	~~0.00~~	~~100.0000~~	~~1~~	~~225.00~~	
~~CE40102~~	~~4 x 1.5 SWA STRANDED ALT CABLE~~			~~M~~	~~P~~	~~300.0000~~	~~0.00~~	~~300.0000~~	~~1~~	~~880.00~~	
~~CE40104~~	~~7 x 1.5 SWA STRANDED ALT CABLE~~			~~M~~	~~P~~	~~30.0000~~	~~0.00~~	~~30.0000~~	~~1~~	~~35.00~~	
~~CE40105~~	~~12 x 1.5 SWA STRANDED ALT CABLE~~			~~M~~	~~P~~	~~80.0000~~	~~0.00~~	~~80.0000~~	~~1~~	~~100.00~~	
~~[illegible]~~	~~19 x 1.5 SWA STRANDED ALT CABLE~~			~~M~~	~~P~~	~~100.0000~~	~~0.00~~	~~100.0000~~	~~1~~	~~40.00~~	
~~[illegible]~~	~~3 x 1MM GT GREY CABLE~~			~~M~~	~~P~~	~~30.0000~~	~~0.00~~	~~30.0000~~	~~1~~	~~402.00~~	
~~CE40127~~	~~4 x 1.5MM GT GREY CABLE~~			~~M~~	~~P~~	~~10.0000~~	~~0.00~~	~~10.0000~~	~~1~~	~~200.00~~	
~~CE40131~~	~~2 x 0.75MM TT BLUE CABLE~~			~~M~~	~~P~~	~~100.0000~~	~~0.00~~	~~100.0000~~	~~1~~	~~650.00~~	
CE40426	M20 BLUE PLASTIC SANTOP GLAND			EA	P	2.0000	0.00	2.0000	1	85.00	
CE49231	SWA 16/M20 GLND CW L/N BK			EA	B	2.0000	0.00	2.0000	1	0.00	
CE49236	SWA 20S/M20 GLND CW L/N BK			EA	B	8.0000	0.00	8.0000	1	0.00	
CE49240	SWA 20/M20 GLND CW L/N BK			EA	M	2.0000	0.00	2.0000	1	1.00-	
CE49242	SWA 25/M25 GLND CW L/N BK			EA	B	2.0000	0.00	2.0000	1	0.00	
CE49254	SWA 20/M20 GLND CW L/N BL			EA	B	2.0000	0.00	2.0000	1	0.00	
CE49284	CT 16/M20 GLND CW L/N BK			EA	B	2.0000	0.00	2.0000	1	0.00	
CE49402	M20 BLUE GLAND CW L/NUT			EA	B	2.0000	0.00	2.0000	1	0.00	
CE49412	M20 GREY GLAND CW L/NUT			EA	B	2.0000	0.00	2.0000	1	0.00	
CE99001	BUTANE CALIBRATION KIT			EA	B	1.0000	0.00	1.0000	1	0.00	
CE99301	CATALYTIC DETECTOR ASSY			EA	B	3.0000	0.00	3.0000	1	0.00	

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COMPONENT NUMBER	COMPONENT DESCRIPTION	LINE NO	UP NO	UNIT MEAS	MAN PUR	STANDARD USAGE	WASTE %	TOTAL USAGE	PER	QUANTITY ON HAND	BILL OF MATERIAL NARRATIVE
CE60707	C60HD202 C/BREAKER 2A D/POLE			EA	P	1.0000	0.00	1.0000	1	4.00	
CE60711	C60HD210 C/BREAKER 10A D/POLE			EA	P	1.0000	0.00	1.0000	1	4.00	
CE60712	C60HD216 C/BREAKER 16A D/POLE			EA	P	1.0000	0.00	1.0000	1	0.00	
CE60801	67040 10WAY TEST LAMP DIODE			EA	P	1.0000	0.00	1.0000	1	6.00	
CE60802	67032 20WAY TEST LAMP DIODE			EA	P	3.0000	0.00	3.0000	1	8.00	
CE61017	19"RACK MOUNTING MOUNTING BRACKET PR			EA	P	2.0000	0.00	2.0000	1	8.00	
CE61018	SHEET TILE 24 X 24 SOLID			EA	P	249.0000	0.00	249.0000	1	1231.00	
CE61019	SHEET TILE 24 X 24 MIR HOLE			EA	P	64.0000	0.00	64.0000	1	209.00	
CE61020	CREAM TILES 24 X 2488			EA	P	29.0000	0.00	29.0000	1	111.00	
CE61021	CREAM TILES 48 X 2488			EA	P	14.0000	0.00	14.0000	1	62.00	
CE61102	209-8000 SURF START 2.2KA			EA	P	1.0000	0.00	1.0000	1	0.00	
CE691001	RED LED ASST			EA	D	23.0000	0.00	23.0000	1	0.00	
CE691002	AMBER LED ASST			EA	D	9.0000	0.00	9.0000	1	0.00	
CE691003	GREEN LED ASST			EA	D	14.0000	0.00	14.0000	1	0.00	
CE691004	WHITE LED ASST			EA	D	3.0000	0.00	3.0000	1	0.00	
CE691006	RED SP PUSHBUTTON ASST			EA	D	6.0000	0.00	6.0000	1	0.00	
CE691008	GREEN SP PUSHBUTTON ASST			EA	D	6.0000	0.00	6.0000	1	0.00	
CE691009	BLUE D/P PUSHBUTTON ASST			EA	D	2.0000	0.00	2.0000	1	0.00	
CE69101	RELAY & BASE 24 VDC			EA	M	27.0000	0.00	27.0000	1	0.00	
CE691010	KEY SW S/POLE SPRING RTN			EA	D	1.0000	0.00	1.0000	1	0.00	
CE90201	600-031 19" INSTRUMENT TRAY			EA	P	1.0000	0.00	1.0000	1	3.00	
CE90203	600-100 14 WAY AUTOMAN BOARD			EA	P	1.0000	0.00	1.0000	1	1.00	
CE90204	600-023 BLANKING PLATE, 1 WAY			EA	P	5.0000	0.00	5.0000	1	15.00	
CE90205	600-000 CRIALTIC BOARD			EA	P	8.0000	0.00	8.0000	1	16.00	
CE90206	600-001 INFRA RED BOARD			EA	P	2.0000	0.00	2.0000	1	4.00	
CE90214	007-111 BATTERY CHARGER MODULE R/U TRANSFORMER			EA	P	1.0000	0.00	1.0000	1	3.00	
CE99401	INFRA RED DETECTOR ASST-CHARGER			EA	D	2.0000	0.00	2.0000	1	0.00	
SIISBETJ	INSTALLATION MATERIALS										
CE10508	B030/2Z1-731/161/102 ISOLATOR 4 POLE 16 AMP			EA	P	6.0000	0.00	6.0000	1	0.00	
CE10611	E/STOP BOX WITH 2XN/C CONTACTS + 2 X NO ENTRIES BLANK REF: 411-8174-R0001			EA	P	5.0000	0.00	5.0000	1	0.00	
CE10612	STOP/START BOX BLANK REF: 411-8274-R0003			EA	P	3.0000	0.00	3.0000	1	0.00	
CE19701	TERMINAL BOX ASST-MARATHON			EA	D	1.0000	0.00	1.0000	1	0.00	
CE19808	SWA 16/M20 GLND WD L/N BK			EA	D	3.0000	0.00	3.0000	1	0.00	
CE19818	SWA 20S/M20 GLND WD L/N BK			EA	D	3.0000	0.00	3.0000	1	0.00	
CE19830	SWA 25/M25 GLND WD L/N BK			EA	M	3.0000	0.00	3.0000	1	0.00	
CE19838	SWA 16/M20 GLND CW L/N BK			EA	D	7.0000	0.00	7.0000	1	0.00	
CE19843	SWA 20S/M20 GLND CW L/N BK			EA	D	15.0000	0.00	15.0000	1	0.00	
CE19849	SWA 20/M20 GLND CW L/N BK			EA	D	2.0000	0.00	2.0000	1	0.00	
CE19851	SWA 25/M25 GLND CW L/N BK			EA	D	2.0000	0.00	2.0000	1	0.00	
CE19863	SWA 20/M20 GLND CW L/N BL			EA	D	2.0000	0.00	2.0000	1	0.00	

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COMPONENT NUMBER	COMPONENT DESCRIPTION	LINE NO	OP NO	UNIT MEAS	MAN PUR	STANDARD USAGE	WASTE %	TOTAL USAGE	PER	QUANTITY ON HAND	BILL OF MATERIAL NARRATIVE
CE20001	PS 4806 CABINET 2000x800x600			EA	P	1.0000	0.00	1.0000	1	3.00	
CE20002	PS 4106 SIDE PANEL 2000x600			EA	P	1.0000	0.00	1.0000	1	3.00	
CE20003	SO 2833 PLINTH 800x600x100m			EA	P	1.0000	0.00	1.0000	1	3.00	
CE20006	FT 2732 GLAZED DOOR 757x397x30			EA	P	1.0000	0.00	1.0000	1	2.00	
CE29001	SWING FRAME ASSY 220			EA	D	1.0000	0.00	1.0000	1	0.00	
CE29003	GAS MANAGER ASSY MAT'L			EA	D	1.0000	0.00	1.0000	1	0.00	
CE29401	BLANKING PLATE 30 ASSY			EA	D	2.0000	0.00	2.0000	1	0.00	
CE29402	BLANKING PLATE 10 ASSY			EA	D	1.0000	0.00	1.0000	1	0.00	
CE30002	038046 SAK 2.5/35 Beige term.			EA	P	106.0000	0.00	106.0000	1	397.00	
CE30003	038048 SAK 2.5/35 Blue term.			EA	P	30.0000	0.00	30.0000	1	134.00	
CE30012	066106 EK2.5/35 EARTH TERMINAL			EA	P	16.0000	0.00	16.0000	1	80.00	
CE30024	106597 DLA 2.5/35.1x+1c+1earth			EA	P	5.0000	0.00	5.0000	1	66.00	
CE50201	ZB2 BE101 N/O CONTACT BLOCK			EA	P	1.0000	0.00	1.0000	1	13.00	
	FOR TE PUSH BUTTONS ETC										
CE50202	ZB2 BE102 N/C CONTACT BLOCK			EA	P	2.0000	0.00	2.0000	1	35.00	
	FOR TE PUSH BUTTONS ETC										
CE[illegible]1	566-184 24V DC TWO TONE SIREN			EA	P	1.0000	0.00	1.0000	1	3.00	
CE59208	EMERGENCY STOP 40mm C/W LEGEND			EA	D	1.0000	0.00	1.0000	1	0.00	
CE59306	STACKING BEACON RED,AMB,GRN			EA	D	1.0000	0.00	1.0000	1	0.00	
	24 VDC										
CE60001	LP1K0910BD 24Vdc 4kW 4N/O			EA	P	2.0000	0.00	2.0000	1	8.00	
CE60003	LP2K0910BD 24Vdc STD.REVRS.4kW			EA	P	2.0000	0.00	2.0000	1	9.00	
	3										
CE60008	LA1 KN31 AUX CONTACT 3N/O+1N/C			EA	P	6.0000	0.00	6.0000	1	6.00	
CE60009	LA1 KN22 AUX CONTACT 2N/O+2N/C			EA	P	7.0000	0.00	7.0000	1	33.00	
CE60030	LP1-K0901-BD CONTACTOR 24VDC			EA	P	8.0000	0.00	8.0000	1	15.00	
CE60108	MSR6R/T E/STOP RELAY (EJA)			EA	P	1.0000	0.00	1.0000	1	2.00	
	PART NO 23017 GUARDMASTER										
CE60205	GV2 M05 MOTOR C/BRKR 0.63-1A			EA	P	1.0000	0.00	1.0000	1	4.00	
CE60206	GV2 M06 MOTOR C/BRKR 1-1.6A			EA	P	1.0000	0.00	1.0000	1	6.00	
CE60207	GV2 M07 MOTOR C/BRKR 1.6-2.5A			EA	P	4.0000	0.00	4.0000	1	8.00	
CE60208	GV2 M08 MOTOR C/BRKR 2.5-4A			EA	P	1.0000	0.00	1.0000	1	1.00	
CE60210	GV2 M14 CIRC/BRKR 6-10 AMP			EA	P	1.0000	0.00	1.0000	1	2.00	
CE60211	GV2 M16 CIRC/BRKR 9-14 AMP			EA	P	1.0000	0.00	1.0000	1	0.00	
[illegible]215	GV2 AE11 AUX CONTACT 1N/O 1N/C			EA	P	8.0000	0.00	8.0000	1	19.00	
CE[illegible]7	GV1 G07 BUS BAR 4 WAY			EA	P	2.0000	0.00	2.0000	1	4.00	
CE60218	GV1 G08 BUS BAR 2 WAY			EA	P	1.0000	0.00	1.0000	1	7.00	
CE60247	LR2-K0305 O/LOAD RELAY .54-.8A			EA	P	2.0000	0.00	2.0000	1	3.00	
CE60314	85777 FSU 10 AMP			EA	P	1.0000	0.00	1.0000	1	3.00	
CE60318	597-837 12V 24Ah BATTERIES			EA	P	2.0000	0.00	2.0000	1	7.00	
	FOR GAS MANAGER (2 REQ'D)										
CE60320	TRANSFORMER (805-316) 230V 24V			EA	P	1.0000	0.00	1.0000	1	5.00	
	100 VA										
CE60404	VCC3 63 AMP ISOLATOR			EA	P	1.0000	0.00	1.0000	1	2.00	
CE60410	V112 NEUTRAL LINK FOR VCC3/4			EA	P	1.0000	0.00	1.0000	1	3.00	
CE60502	88873016 TWO MULTIFUNC TIMER			EA	P	2.0000	0.00	2.0000	1	18.00	
CE60606	MAINS FILTER 3PH 50A (294-329)			EA	P	1.0000	0.00	1.0000	1	3.00	
	IRF-450										

BWI KP AEROFILL MACHINE SPARES - ONE PAGE

SUDANESE COSMETICS S1156E

~~BOBE KP AEROFILL~~ ~~[illegible]~~ ~~SINGLE LEVEL EXPLOSION~~

~~COMPONENT~~ NUMBER	~~COMPONENT~~ DESCRIPTION	~~LINE~~ NO	~~OPT~~ NO	~~UNIT~~ MEAS	~~MAN~~ PUR	~~STANDARD~~ USAGE
S1156EFS	SPARES T/TANK L/PAK & G/HOUSE					
1851006C	CRIMP JAW 6 SEGMENT			WEA	P	2.0000
~~1851007~~	~~CRIMP WEDGE~~			~~WEA~~	~~P~~	~~2.0000~~
1851008	CRIMP JAW RETURN SPRING			WEA	P	2.0000
~~[illegible]~~	~~CAN LOCATING PUSHER~~			~~VEA~~	~~P~~	~~20.0000~~
35005020	CAN PUSHER			VEA	P	20.0000
~~[illegible]~~	~~[illegible]~~			~~XEA~~	~~P~~	~~10.0000~~
43 150	CHAINWHEEL MOD TO 9401680			WEA	P	2.0000
~~[illegible]~~	~~CLIP SPRING~~			~~VEA~~	~~P~~	~~10.0000~~
4308204	NIP WHEEL			WEA	P	1.0000
~~[illegible]~~	~~THRUST WASHER~~			~~EA~~	~~P~~	~~4.0000~~
9400827	D.U. BEARING			EA	P	1.0000
~~[illegible]~~	~~DEEP GROOVE BALL BEARING~~			~~EA~~	~~P~~	~~4.0000~~
9431701	018BSP PRESSUR REGULATOR			EA	P	1.0000
~~[illegible]~~	~~0-160 GAUGE~~			~~EA~~	~~P~~	~~1.0000~~
9431941	GAUGE			EA	P	2.0000
~~[illegible]~~	~~GUAGE ADAPTOR~~			~~EA~~	~~P~~	~~2.0000~~
9432746	BUNDY TUBE 038			FT	P	1.0000
~~[illegible]~~	~~HONEYWELL LUCIFER [illegible]~~			~~EA~~	~~P~~	~~1.0000~~
9435633	INDUSTRIAL PRESSURE SWITCH			EA	P	1.0000
~~[illegible]~~	~~[illegible] HOSE~~			~~EA~~	~~P~~	~~1.0000~~
9462629	RELIEF VALVE NO H124			EA	P	1.0000
~~CE10001~~	~~[illegible] RELAY O/P~~ (37374)			~~EA~~	~~P~~	~~1.0000~~
~~[illegible]~~	~~DL1 CE024 24V BA9 BULB~~			~~EA~~	~~P~~	~~3.0000~~
[illegible]0522	DL1 BA024 24V BULB			EA	P	3.0000
~~[illegible]~~	~~LP1K0910BD 24VDC 4KW 4N/O~~			~~EA~~	~~P~~	~~1.0000~~
CE60009	LA1 KN22 AUX CONTACT 2N/0+2N/C			EA	P	1.0000
~~CE60101~~	~~MY414N 24VDC RELAY 4P C/O LED~~ C/W LED & P/BUTTON			~~EA~~	~~P~~	~~2.0000~~
~~[illegible]~~	~~[illegible] AUX CONTACT 1N/O 1N/C~~			~~EA~~	~~P~~	~~1.0000~~
CE60502	88893016 TRU MULTIFUNC TIMER			EA	P	1.0000
~~[illegible]~~	~~[illegible] CATALYTIC BOARD~~			~~EA~~	~~P~~	~~1.0000~~
CE90305	001-230 VQ23 DETECTOR INSERT			EA	P	1.0000
~~[illegible]~~	~~BUTANE CALIBRATION KIT~~			~~EA~~	~~D~~	~~1.0000~~
K0580700	S/LIST			EA	M	4.0000
~~[illegible]~~	~~S/LIST PISTON TYPE BODY~~			~~VEA~~	~~M~~	~~4.0000~~
K16774ME	SEAL KIT EXTERNAL PILOT VALVES			EA	M	2.0000
~~[illegible]~~	~~SEAL KIT 4 1/2" AIR CYL PROP~~			~~EA~~	~~M~~	~~2.0000~~
K1691900	S/LIST PROPELLENT RAM 0-400ML			XEA	M	4.0000
~~[illegible]~~	~~S/LIST 1/2" STREAMFLOW NOZZLE~~			~~XEA~~	~~M~~	~~4.0000~~
K175540M	SEAL KIT			EA	M	4.0000
~~[illegible]~~	~~SEAL KIT~~			~~EA~~	~~M~~	~~4.0000~~
K4044200	SPARES KIT			XEA	M	1.0000
~~[illegible]~~	~~S/LIST PROPELLENT NOZ AIR CYL~~			~~EA~~	~~M~~	~~2.0000~~

Beel Industrial Boilers Plc
PO Box 148, Becor House, Green Lane
Lincoln LN6 7DN. ENGLAND.
Tel : 044 (0) 1522 510510
Fax : 044 (0) 1522 525900
E Mail - beel.boilers@btinternet.com

FROM: NEIL MELLOR	DATE: 04 MARCH 1998
TO: GRAHAM CORNFORTH	COMPANY: OLD PARK
FAX NO: 01384 410784	PAGE: 1 OF 2

OUR REF : 20278/9

YOUR REF : P2190

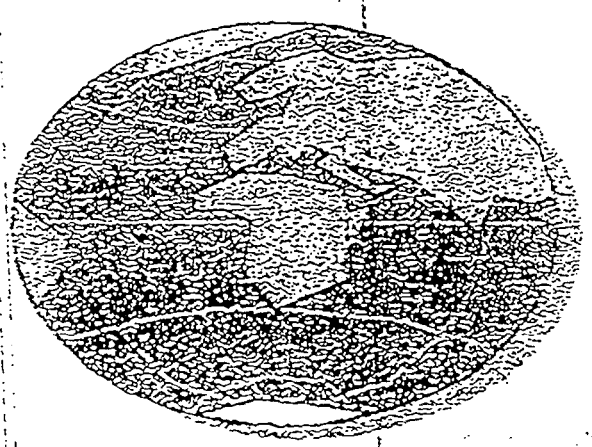
Reference to your fax of 3.3.98 giving details of Richard's measurements from site. We confirm that the thicknesses given as minimums are acceptable. We recommend that the marks on the outer surface are dressed and blended to ensure there are no significant notches or changes in section. Could Richard also confirm that there is definitely no flattening or distortion of shell diameters in damaged areas?

Regards

Neil Mellor

Appendix 3.2

OLD PARK PRO GAS (UK) LTD
WOODS LANE
CRADLEY HEATH
WEST MIDLANDS
B64 7AN
TEL: 00 44(0)1384 412550
FAX: 00 44(0)1384 410784



FACSIMILE

To Fax No. 0044 1384 410784

Company: OPP

No. of Pages: 1

OPP Ref: P2190

For the attention of: MR GRAHAM CORNFORTH

Customer Ref: Room 521

REF. VESSEL THICKNESS

DISH END 18.3mm — VESSEL ONE

SHELL 18.25 mm

DISH END 19.4mm — VESSEL TWO

SHELL 18.68mm

MIN THICKNESS WHEN TESTED.

NOTE FAX NO 11 775793

BEST REGARDS

RICHARD BEET

Appendix 3.2

Memorandum

To: Graham Comforth (old Park Progas)

CC: Mike Fox

Robin Green

From: Neil Mellor

Date: February 17, 1998

Re: Response to Report on Vessels 20278/9 Damaged in Transit to Sudan

---

We have studied the report from KP Aerofill in relation to the damaged area of shell and head after a design check we would make the following comments:-

1) A gouge to the depth of 1mm over an area of 25mm x15 mm Assuming shell thickness to be as stated on drg. The thickness of this area would be would be 0.14mm above the min design requirement and is therefore O.K. Providing the damage has not misshapen the shell.

2) The damage to the Head covering an area of 100 x 3 to a depth of 1mm again assuming head thickness to be to drg. Min. This would take the thickness of head below the min required for design i.e. 0.53mm below. It should be remembered that:- Firstly material thickness of plates is always size to plus and cannot go negative this means that the original plate thickness is likely to have been at least 0.5mm above nominal. Secondly that plate used for forming the head is 1/2mm above min to ensure min is achieved at Knuckle. Taking these two items into consideration it is very unlikely that this are of head is below thickness.

In order to fully clear these two damaged areas we would ideally require a 24 point roundness survey carrying out of the shell area and a thickness survey doing by U.T. in both places.

In relation to the paint problem between shell and saddles attached is copy of cert and condition statement at application. Our painters would like to see photographs showing some detail of the flaking to allow them to discuss the problem with paint suppliers.

Neil Mellor

Appendix 3.2

OLD PARK PRO GAS (UK) LTD

SITE LOCATION: Elie Ind Co. Ltd Sudan

CUSTOMER: BWI KP Aerofill.
33-35 Clayton Road.
Hayes.
Middlesex.
UB3 1RU

SOUNDNESS TEST CERTIFICATE No. P2190-1

INSTALLATION DETAILS: Storage Vessel

GAS TYPE: LPG

NEW OR EXISTING: New.

METER TYPE: N/A

INSTALLATION VOLUME: 20 cubic metres

MINIMUM LEAK DETECTABLE/M^3 OF PIPE: N/A

PERMITTED LEAK RATE: Zero

PRESSURE GAUGE TYPE: Gearing -brass plates

PRESSURE TEST MEDIUM: Nitrogen

TEST PRESSURE: 6 bar g.

BY-BY TEST PERIOD: Not applicable.

STABILIZATION PERIOD: Not applicalbe.

SOUNDNESS TEST PERIOD: One hour

ANY EXISTING POTENTIAL HAZARDS? YES/NO

MAXIMUM PRESSURE DROP ALLOWABLE: None.

RESULTS

ACTUAL PRESSURE DROP(IF ANY): None.

CALCULATED LEAKAGE RATE(IF ANY): N/A

PASS: YES / NO

SIGNED P/P ..... POSITION.Site Engineer.....

Appendix 3.3

COMPANY.Old Park Pro Gas (UK) Limited.....

16

CALCULATED LEAKAGE RATE(IF ANY): N/A

PASS: YES / NO

SIGNED..... POSITION.Site Engineer.....

COMPANY.Old Park Pro Gas (UK) Limited.....

DATE..March 1998.....

COMPANY Old Park Pro Gas (UK) Limited

DATE March 1998

OLD PARK PRO GAS (UK) LTD

SITE LOCATION: Elie Ind Co. Ltd Sudan

CUSTOMER: BWI KP Aerofill
33-35 Clayton Road
Hayes.
Middlesex.
UB3 1RU

SOUNDNESS TEST CERTIFICATE No. P2190-2

INSTALLATION DETAILS: Pipe work

GAS TYPE: LPG

NEW OR EXISTING: New.

METER TYPE: N/A

INSTALLATION VOLUME: 5 cubic metres

MINIMUM LEAK DETECTABLE/M^3 OF PIPE: N/A

PERMITED LEAK RATE: Zero

PRESSURE GAUGE TYPE: Gearing -brass plates

PRESSURE TEST MEDIUM: Nitrogen

TEST PRESSURE: 21 bar g.

LET-BY TEST PERIOD: Not applicable.

STABILIZATION PERIOD: Not applicalbe.

SOUNDNESS TEST PERIOD: One hour

ANY EXISTING POTENTIAL HAZARDS? YES/NO

MAXIMUM PRESSURE DROP ALLOWABLE: None.

RESULTS

ACTUAL PRESSURE DROP(IF ANY): None.

CALCULATED LEAKAGE RATE(IF ANY): N/A

Appendix 3.3

APPENDIX 3.3

BASIC SAFETY TRAINING PROGRAMME

1. Overview of Training Programme

Safety is everybody's business from Manager to Line Operative.

Create a culture of interest, team spirit and a focus on the common goal.

Create a team responsible for setting up procedures teaching the people who will operate them and monitoring and modifying procedures as and when required.

Suggestions for the Plant Operating Safety Team

Site Safety Officer - Dr Khider
Site Training Officer - Samir/Nadir
Site Fire Officer - ?
Site Engineer - Samir
Trainers - ?

The team will probably have an interest in other areas as well as the Aerosol Plant.

The Company may have a structure in place.
Discuss with the team

REVIEW BAMA FEA REQUIREMENTS

BASIC TRAINING

INDUCTION TRAINING

LINE OPERATIVES

FORK LIFT OPERATIVES

PROCESS (MIXING) OPERATIVES

TANK FARM STAFF

QUALITY CONTROL STAFF

STOCK AUDIT STAFF

LINE MECHANICS (INCL. TANK FARM)

ELECTRICAL ENGINEERS

MANAGERS

SECURITY

FIRE FIGHTERS

L.P.G PROPERTIES

What do we know about L.P.G. A.K.A. BUTANE/PROPANE or HYDROCARBON PROPELLANT?

- It is a liquifiable gas stored under pressure in the liquid phase. But with vapour in the top of the tank.
- If spilt or leaked to the open air it will boil off rapidly to vapour.
- It is colourless and has a distinctive smell when delivered to site. After treatment it has only a very slight smell.
- It is non toxic but has Narcotic, Anaesthetic Properties.
- It is heavier than air but lighter than water.
- As a vapour it is highly flammable but only over a limited range of gas air mixtures. About 2% to 10% of gas in air.
- When boiling off from liquid to vapour it removes heat from surface in contact - "cold burns" to skin

How do we handle L.P.G.?

- Store and transfer in closed pressurised system 2-4 bar in liquid phase.

  Vessels } All must be suitable for pressure
  Pipework } and anti static fire safe.
  Valves & Fittings }

- All electrical equipment to be suitable for flammable (Hazardous) area operation. Ex rated for main power systems "Intrinsically Safe" for low voltage (8-9v) non sparking control circuits.

- All of the storage and pipework are electrically continuous

  (bonding strips across flanged joints, for example) and the whole system is earthed.

- Tanker must be connected to earth before any other connections to it are made.

- The connecting hoses are anti static and pressure resistant. Special L.P.G. Hoses.

air, so still well below
are automatically swit
visual warnings are gi

FILLING LINE

- Propellant filling takes place in an external room separated from the main room and designed to be explosion resistant (walls and roof).

- During the filling process there is an escape of liquid propellant every time a can is filled.
  This occurs every time the nozzle adaptor lifts off the valve and is a function of the valve type in terms of quantity of gas lost.

- There is als the possibility of gas loss for other reasons such as faulty or damaged can and/or valve or leaking propellant filling head.

- How do we deal with this potential hazard?

- First by ventilation to dilute and remove the vapour from the room. Two systems are used, one to remove the gas from the immediate Propellant Filler Area, the second to draw air from the floor of the room. (Gas is heavier than Air).

- These systems are two speed and the extraction can be increased by 100% if necessary.

- This action is automatic and is controlled by a system of Gas Detectors installed in the room. If any detector signals a gas concentration of more than 20% of the lower flammable limit (LFL) of the gas that is 20% of 2% gas in air, so still well below the flammable range, then the fans are automatically switched to high speed and audible and visual warnings are given.

If the gas level continues to rise indicating an escalating problem then at 40% of the 'LFL' the line is automatically stopped and gas safety shut-off valves are closed limiting the potential gas leakage to what is in the end of the pipework.

- For the ventilation system to operate effectively the room doors must be closed. Time switches are fitted to each door so that if the door is not closed and latched within say 11 seconds the line will stop.

- Further refinements include air flow switches to monitor the actual flow rate in each system and not merely the fact that the motors are switched on.

- <u>SCRAP CANS WHICH ARE LEAKING</u>

  Rejects from the line should be placed in a suitable metal container (not plastic) and removed to an outside designated area where they may safely be emptied.

- Packed filled stock should be transferred from the filling hall to the finished goods area at regular intervals to ensure that there is no major hazard concentration in the filling area.

شـــركـــة ايـــلـــي للصـــنـــاعـــات المحـــدودة
ELIE INDUSTRIES COMPANY LIMITED

CERTIFICATE OF ACCEPTANCE

UNIDO CONTRACT : 96/128
K.P. AEROFILL REF : 51156E

SUDANESE COSMETICS & HOUSEHOLD PRODUCTS CO. LTD.

We, the undersigned, certify herewith that the Equipment and Services detailed in the above Contract and the Appendices have been Supplied, Installed and Tested in accordance with the UNIDO 'Terms of Reference'.

FOR/	*FOR/*
SUDANESE COSMETICS	*BWI K.P.AEROFILL*
NAME :- ELIE HADDAD	ROBERT L, RUSSELL
DATE :- 30.04.98	30.04.98
SIGNATURE:-	RL Russell

✉✉2304 Khartoum Sudan.☎☎(249 11) 780224/771181
FAX: (249 11) 773218
TLX: 22283 HADDAD & 22668 GMH

BWI KP Aerofill
Aerosol & Spray Equipment

BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308

GENERAL VIEW OF AEROSOL PLANT AREA SUDAN COSMETICS AND HOUSEHOLD PRODUCTS CO

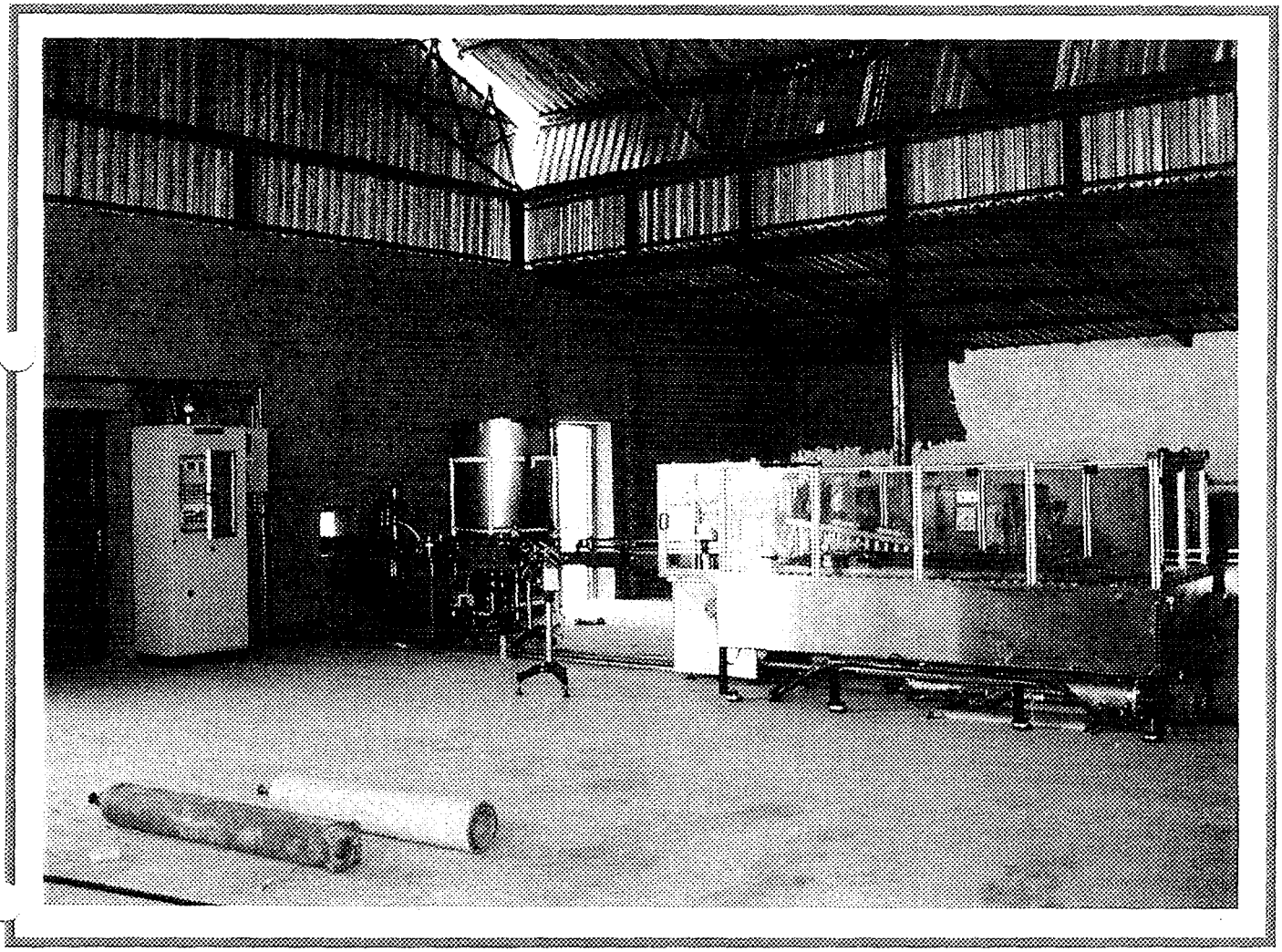
BWI KP Aerofill
Aerosol & Spray Equipment

BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308

VIEW SHOWING STATUS OF BUILDING

BWI KP Aerofill
Aerosol & Spray Equipment

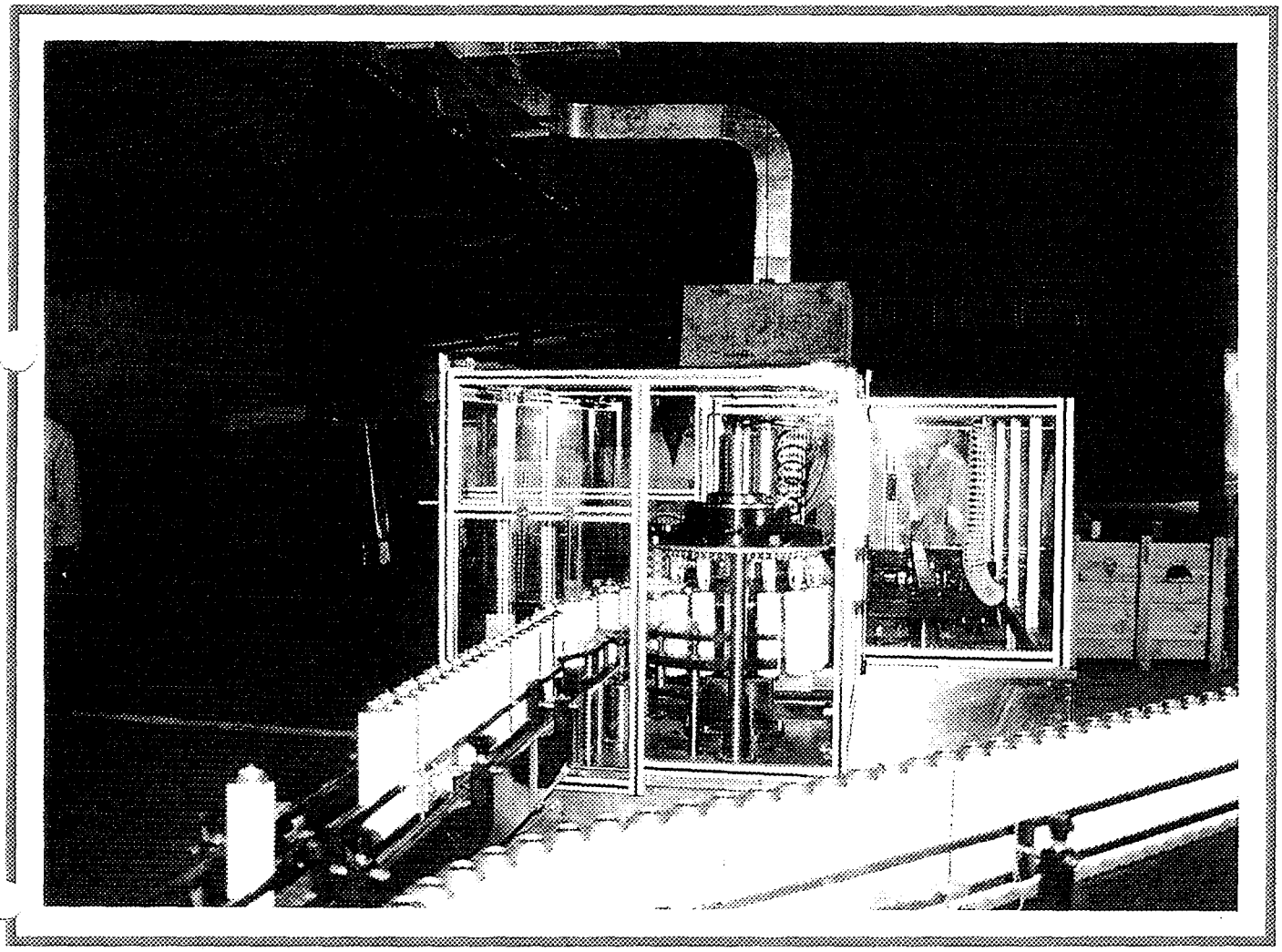
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



GENERAL VIEW OF FILLING LINE SHOWING TEST BATH, CONTROL PANEL (GAS MANAGER) AND GENERAL STATUS OF BUILDING CONSTRUCTION

BWI KP Aerofill
Aerosol & Spray Equipment

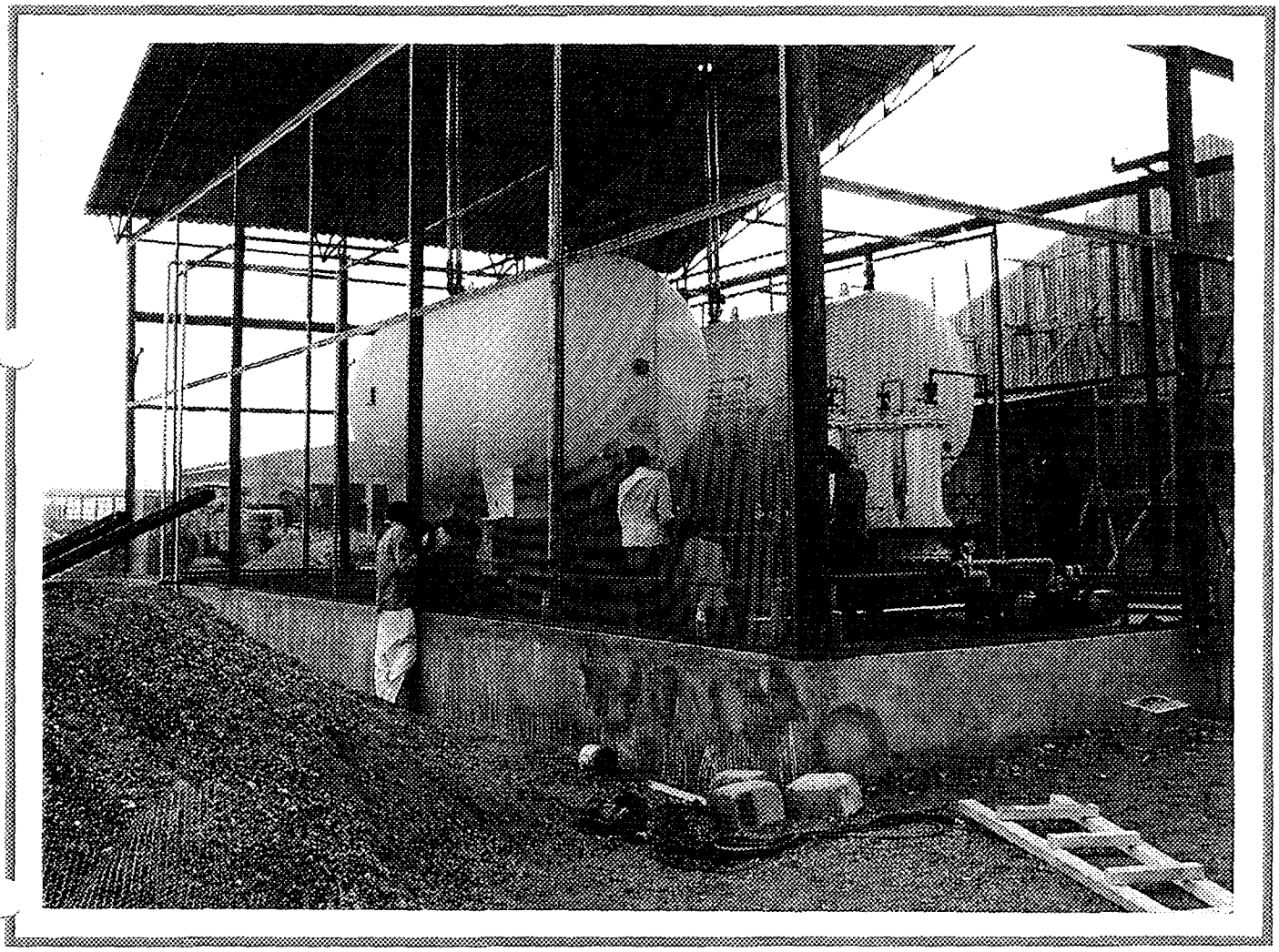
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



END VIEW OF TEST BATH WITH VENTILATION IN PLACE

BWI KP Aerofill
Aerosol & Spray Equipment

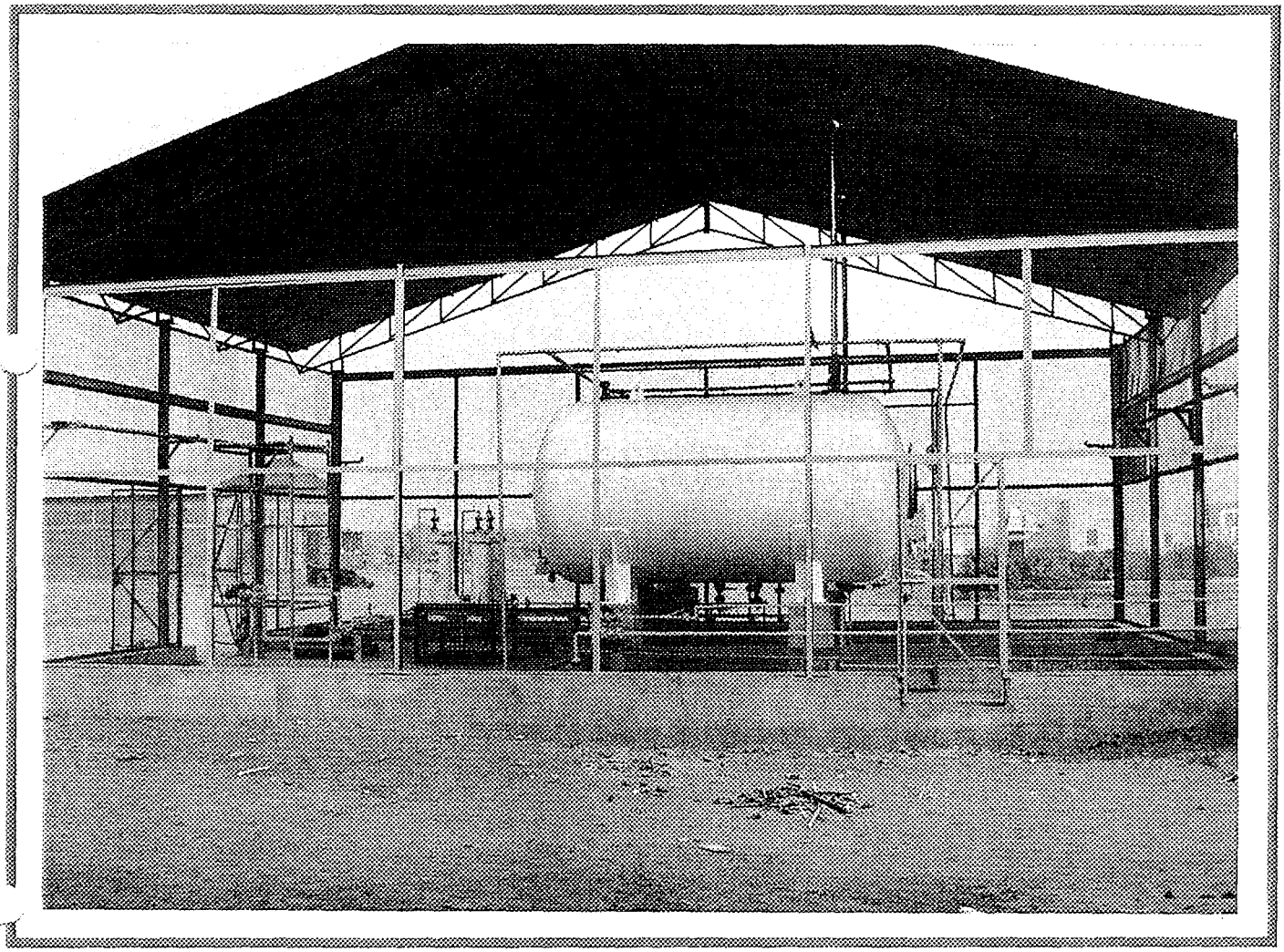
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



GENERAL VIEW OF LPG STORAGE AREA PRIOR TO COMMISSIONING.
PIPEWORK PAINTING IN PROGRESS

BWI KP Aerofill
Aerosol & Spray Equipment

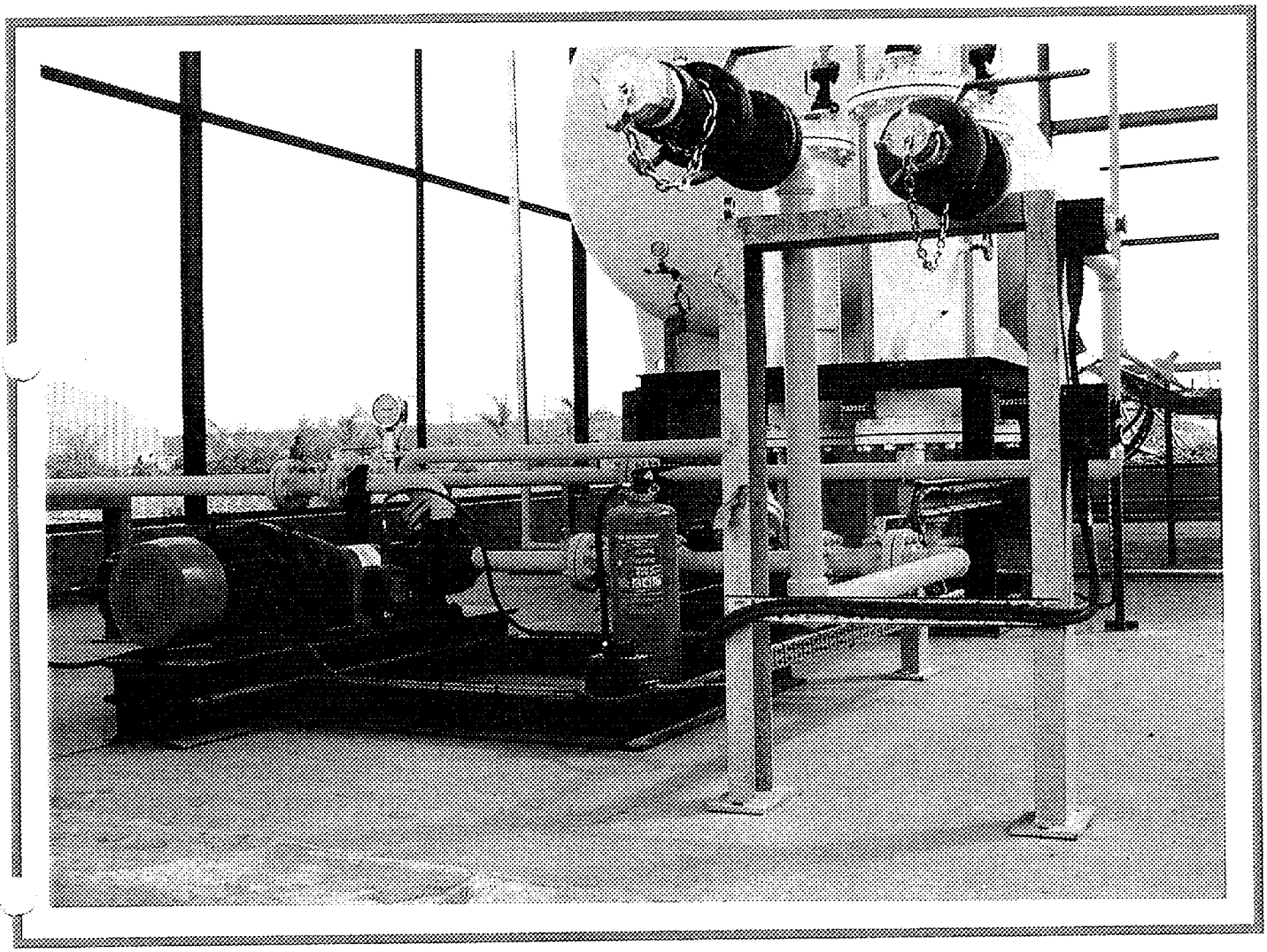
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



GENERAL VIEW OF LPG STORAGE AREA SHOWING SPRINKLER PIPEWORK

BWI KP Aerofill
Aerosol & Spray Equipment

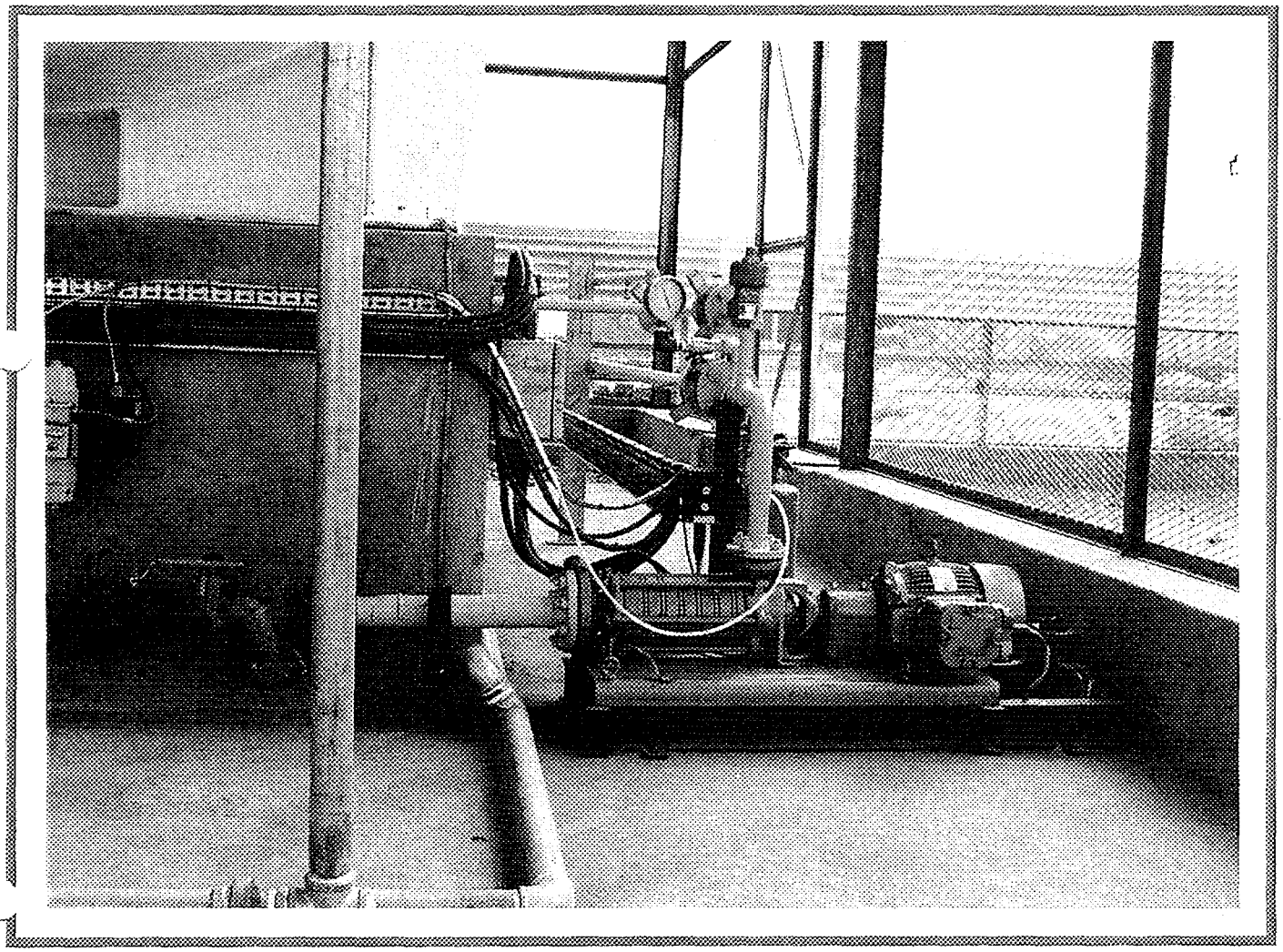
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



DETAIL OF LPG STORAGE AREA SHOWING TANKER OFF-LOAD PUMP, FILL CONNECTIONS AND PORTABLE FIRE EXTINGUISHER

BWI KP Aerofill
Aerosol & Spray Equipment

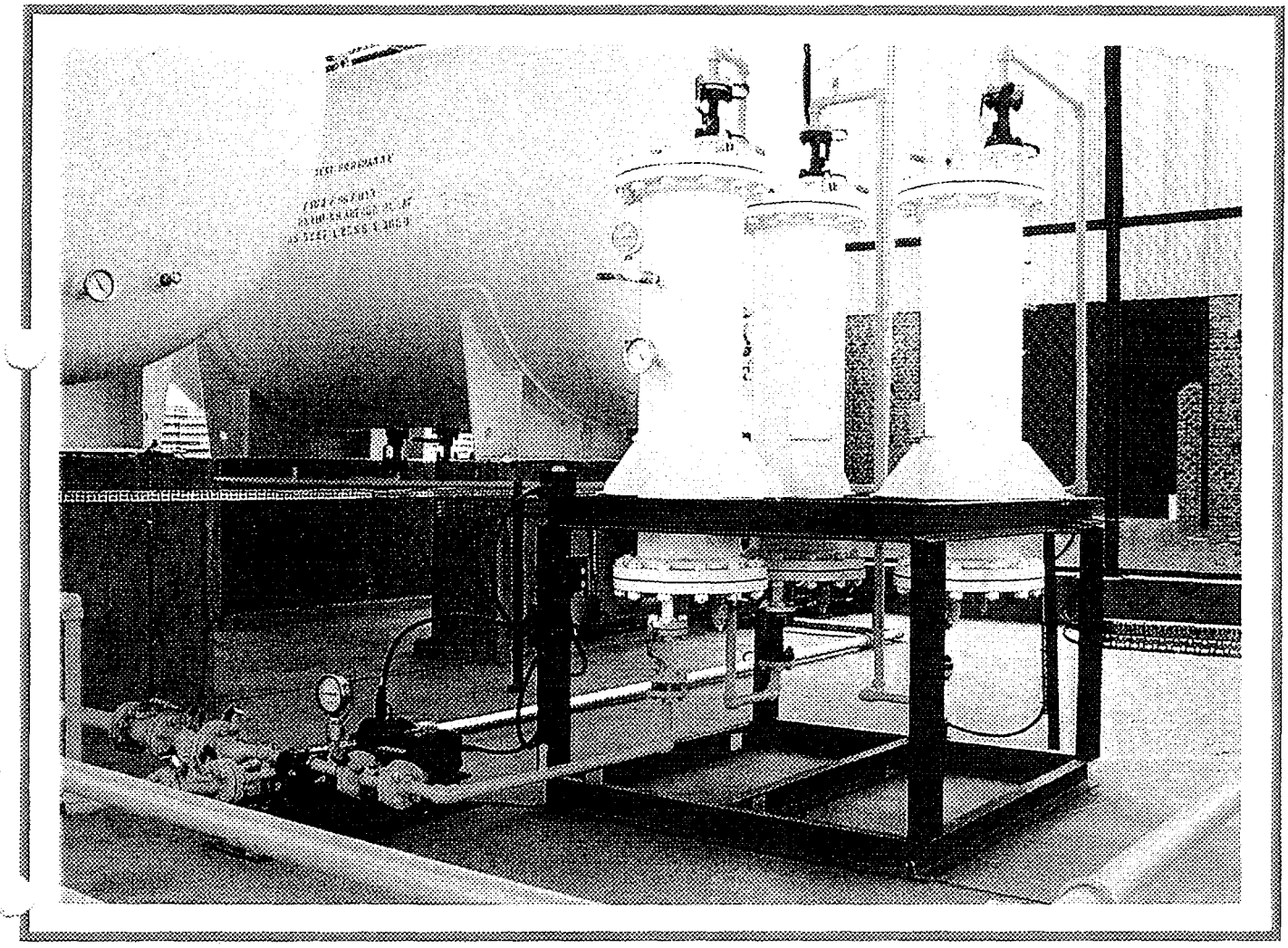
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



DETAIL OF LPG STORAGE AREA SHOWING RECIRCULATION PUMP AND PIPEWORK DETAIL

BWI KP Aerofill
Aerosol & Spray Equipment

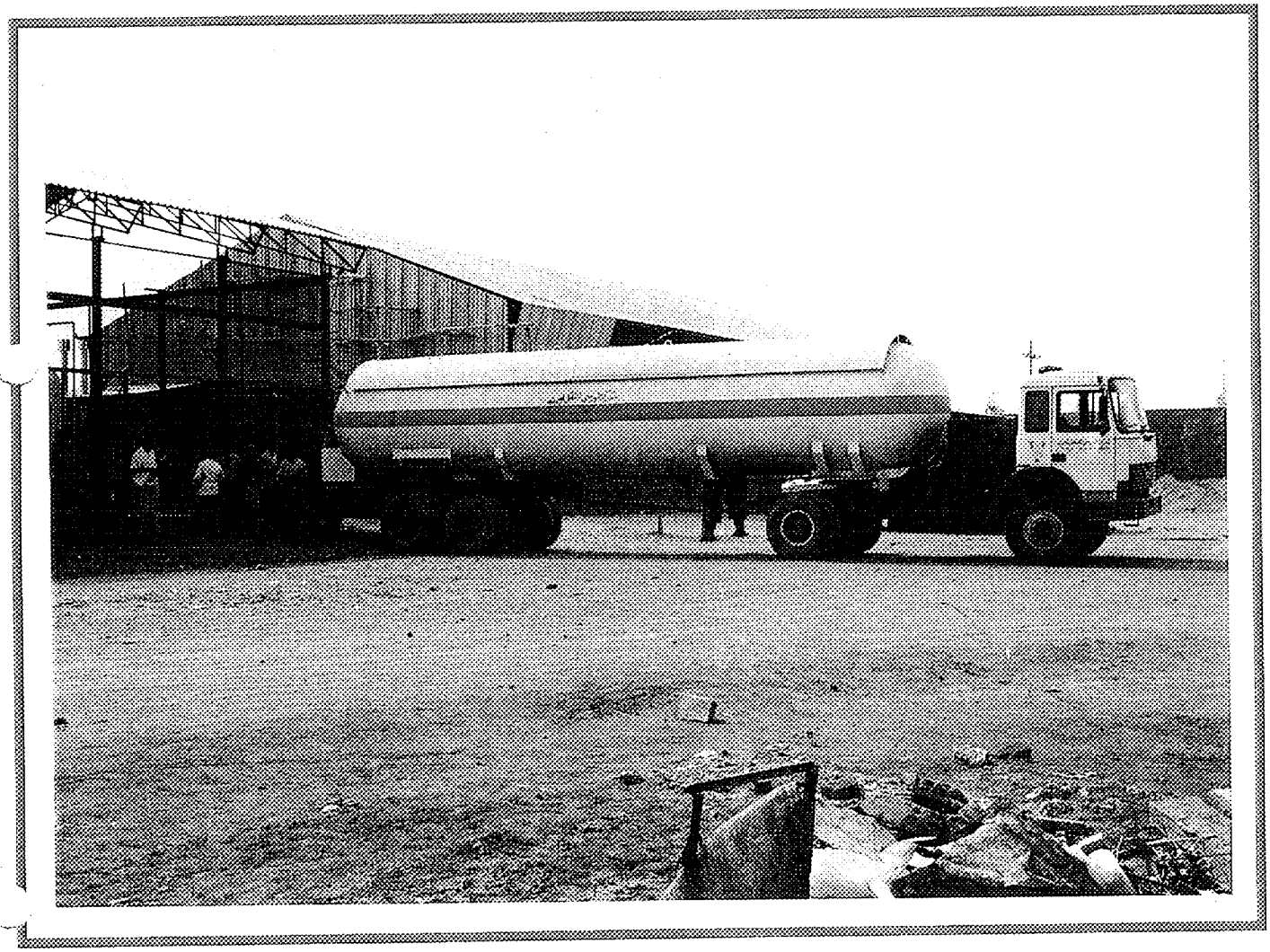
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



DETAIL OF LPG STORAGE AREA SHOWING 3 COLUMN DEODORISATION UNIT AND TRANSFER PUMP

BWI KP Aerofill
Aerosol & Spray Equipment

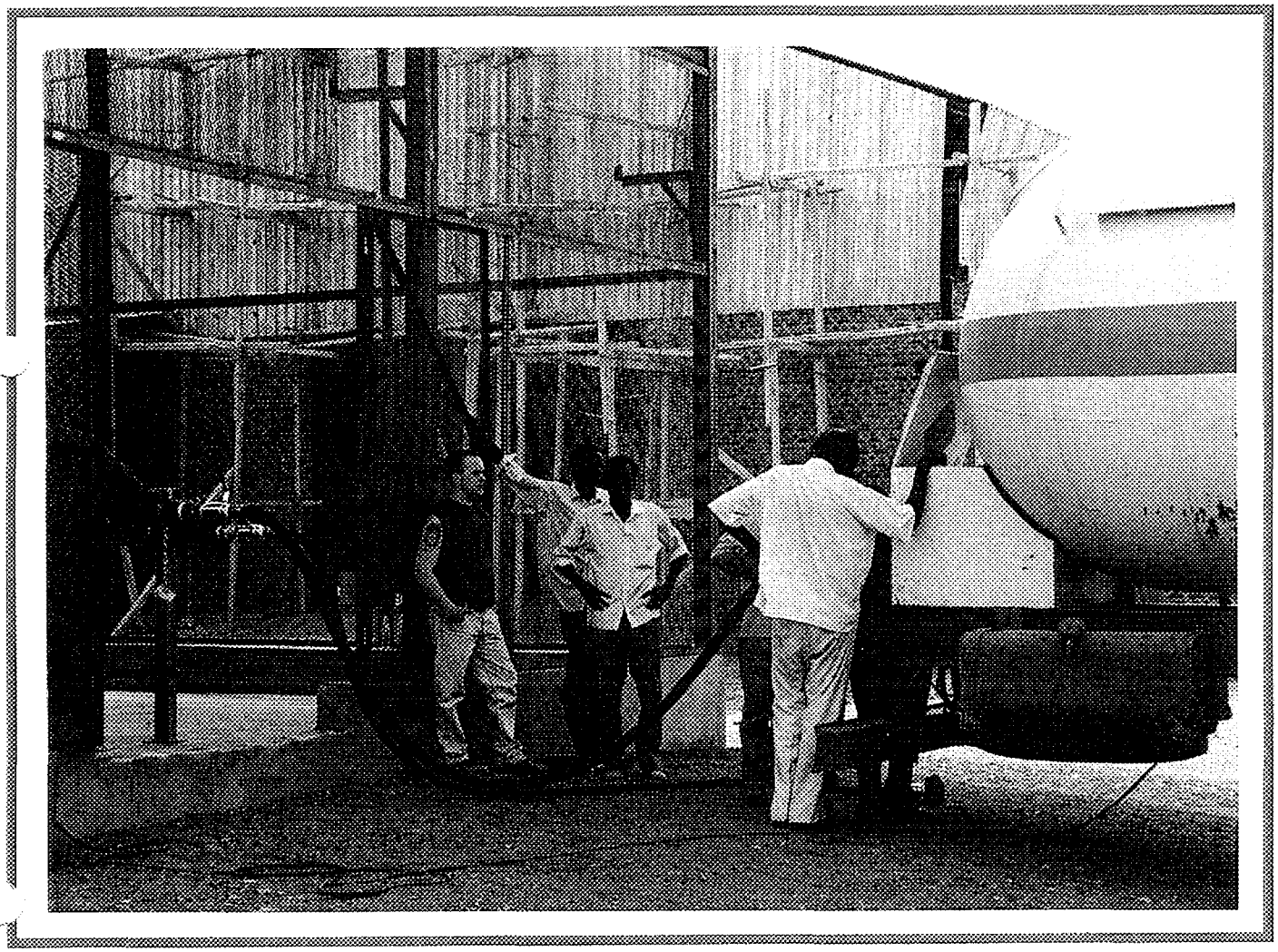
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



LPG BULK TANKER IN POSITION FOR DELIVERY OF FIRST LOAD OF GAS

BWI KP Aerofill
Aerosol & Spray Equipment

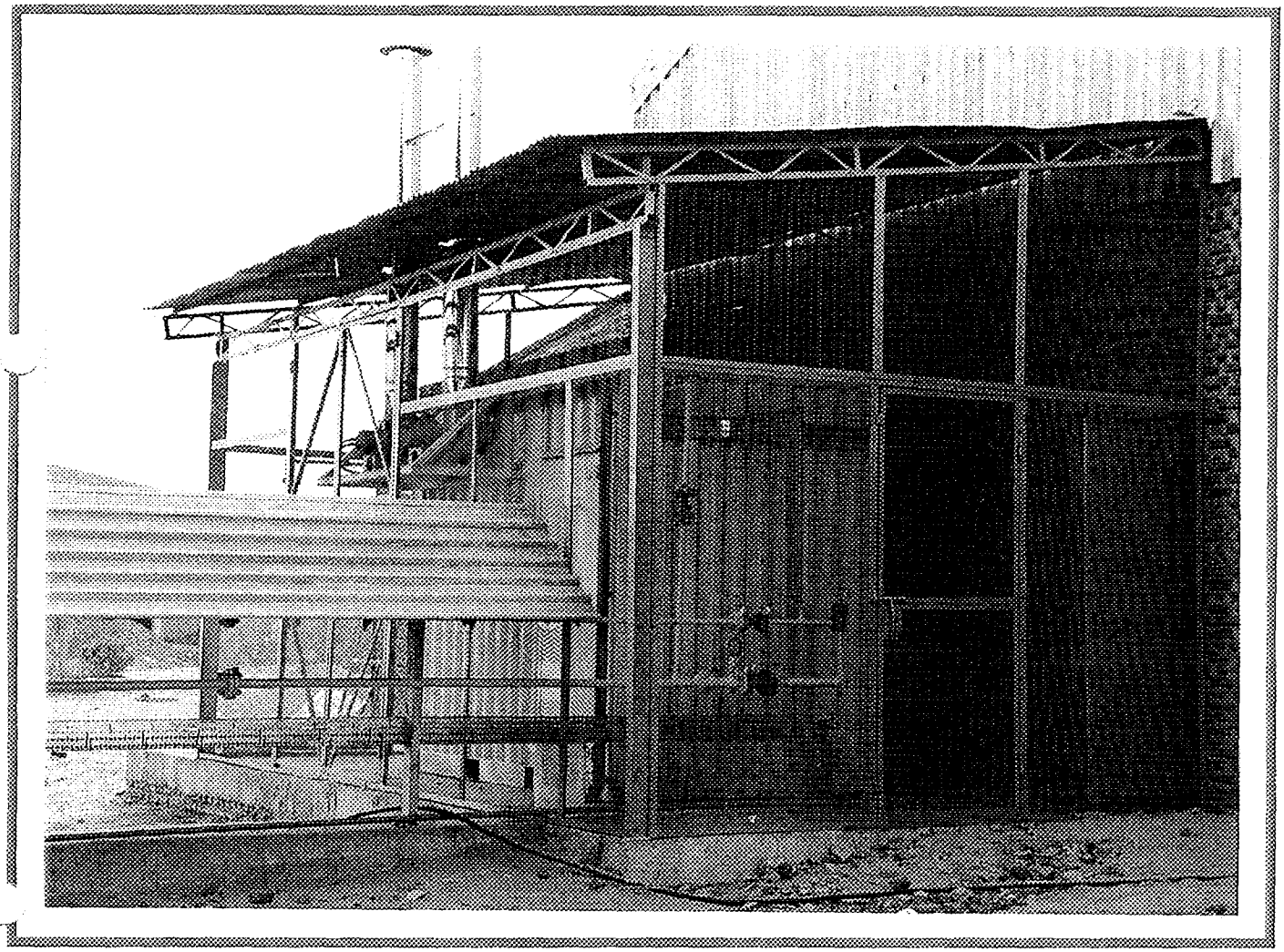
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



TRAINING SESSION IN PROGRESS - LPG DISCHARGE. NOTE TANKER EARTHING LINE

BWI KP Aerofill
Aerosol & Spray Equipment

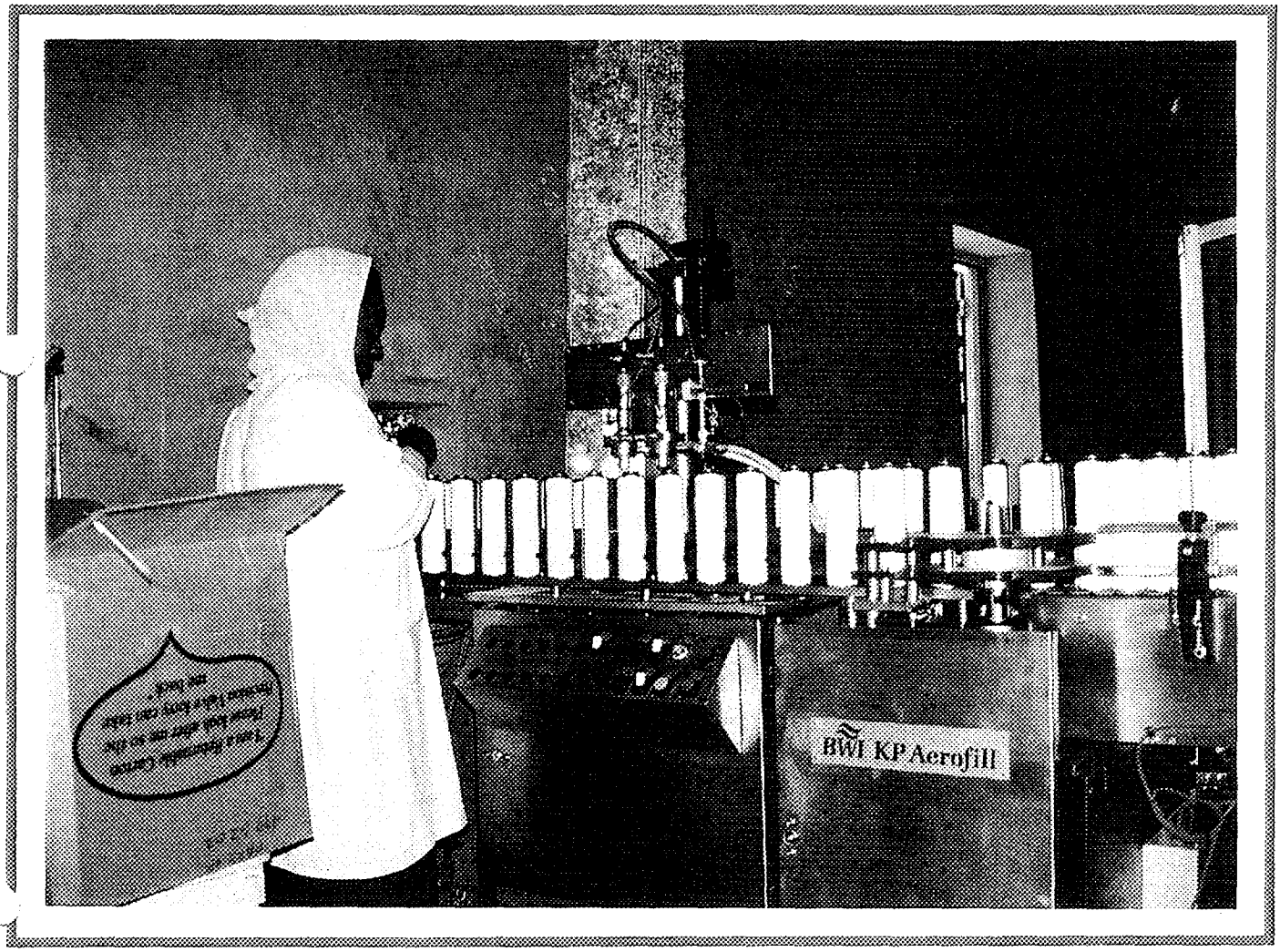
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



GENERAL VIEW SHOWING PROPELLANT GASSING ROOM

BWI KP Aerofill
Aerosol & Spray Equipment

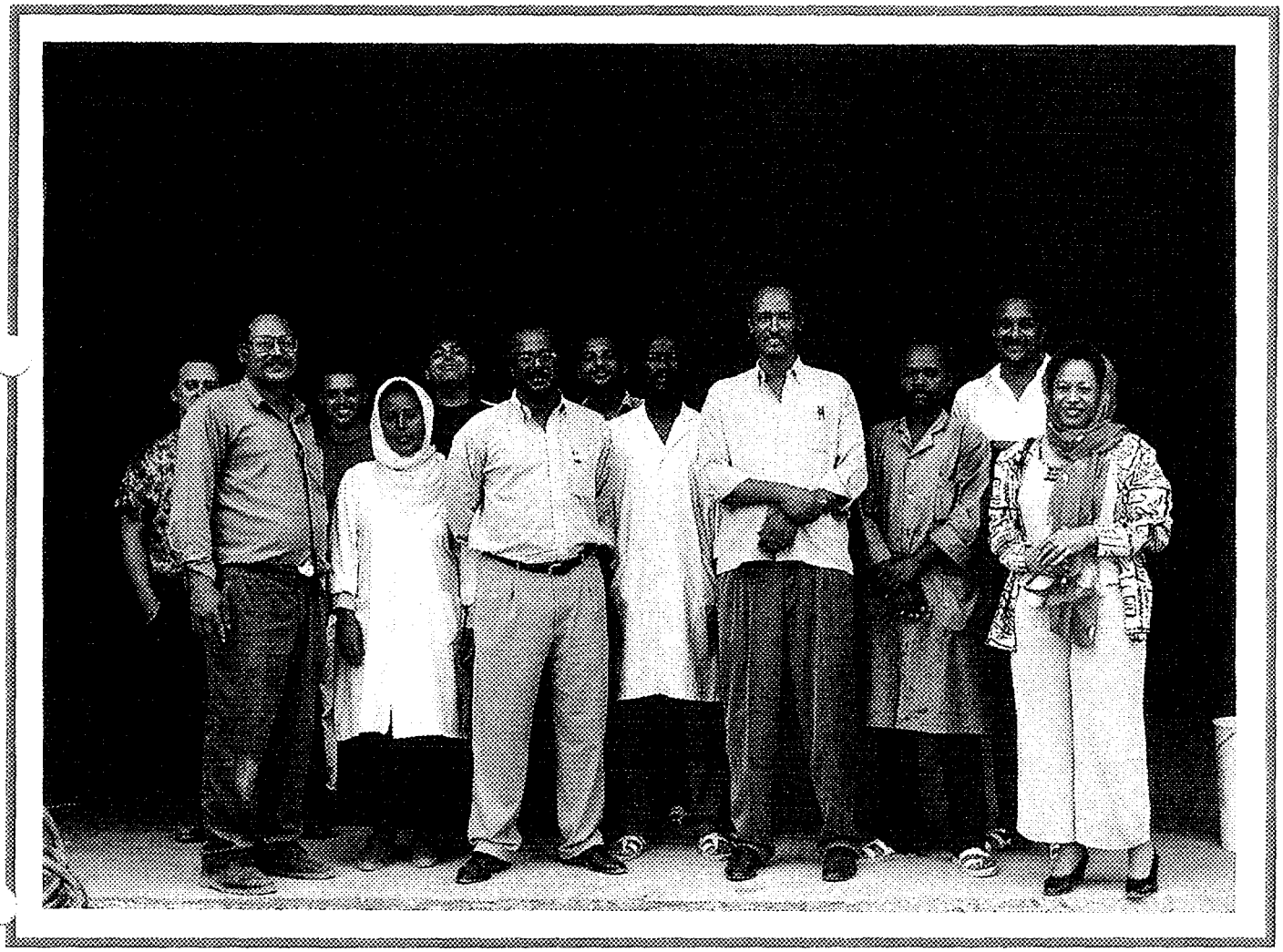
BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



VIEW OF LINE OPERATION SHOWING MANUAL VALVE PLACING STATION

BWI KP Aerofill
Aerosol & Spray Equipment

BWI KP Aerofill
33-35 Clayton Road
Hayes
Middlesex, England
UB3 1RU
Tel: 0181 848 4501
Fax: 0181 561 3308



JOINT COMMISSIONING TEAM

MAIN ROADWAY

ADDITIONAL PRODUCTION AREA

15m REF

1m

5.46m

8.5m

1.5m

4m

COMPRESSOR ROOM & SERVICE AREA

SPARE PARTS STORE

FEMALE W/C

MALE W/C

REST AREA

EMERGENCY EXIT

GANGWAY

WATER STORAGE AREA

FENCED AREA (2M HIGH)

7m

APERTURE WIDTH

0.45m

7m

SERVICE DOOR

SHOW PACKING BAND (COPY FROM LINE LAYOUT)

FILLED CANS TRANSIT AREA

1.5m

PEDESTRIAN EXIT

OFFICE

PRODUCTION BUILDING

30m

LPG STORAGE AREA (COVERED)

2.5m

EMERGENCY EXIT

MAIN TRUCK WAY

MAIN ENTRANCE

2.5m

INSECTICIDE MIXING ROOM (VENTILATED)

DEODORANT & PERFUME MIXING ROOM (VENTILATED)

1HR FIREWALL TO MIXING AREA ROOF LINE

1HR FIREWALL

COMPONENT & EMPTY CAN STORAGE

COLD ROOM (TRANSFERED FROM OLD SITE)

DE-IONISER

PREPARATION ROOM (VENTILATED)

WASH AREA

ROAD TANKER BAY

PROTECTIVE KERB OR 'ARMCO' TYPE BARRIER

WALL MOUNTED CHILLER UNITS

14m

10m

13.2m

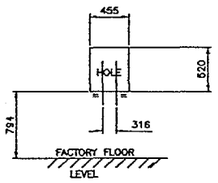
35m

15m

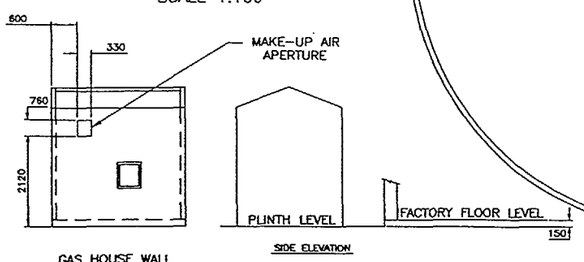
FIRE EXTINGUISHERS

- 9 Kg
- 4.5 Kg

FACTORY WALL APERTURE DETAILS
(NOT TO SCALE)



GAS HOUSE PLINTH DETAILS
SCALE 1:100



SCALE – METRES

0 2 4 6 8 10 20 30 40

MODIFICATION			DESCRIPTION: SITE BLOCK PLAN		ADDITIONAL SHT SIZES
ISS.	DATE	SIG.			
			DRAWN: T.FOREY	BWI KP Aerofill Aerosol & Spray Equipment	X
			DATE: 1-5-97	CLAYTON ROAD, HAYES, MIDDX. UB3 1RU ENGLAND	X
			SCALE: 1:200	DRG. No. X029-97-024	X
				ISSUE A	W
				SHEET 1/5	–

Appendix 3.7

APPENDIX 9

MP/96/013
PHASING OUT OF CFCs AT SUDANESE COSMETICS AND HOUSEHOLD PRODUCTS.

NOTES OF THE MEETING.
The meeting took place from 12 to 15 December 1996. The objective of the meeting was to define the technical and technological requirements for the construction of the new aerosol plant in the premises of Sudanese Cosmetics to allow the production of cosmetics and insecticides aerosols utilizing LPG as propellant. The details for plant lay out and requirements for the different rooms and areas of the new aerosol plant are indicated below.

The new aerosol plant will be part of the industrial premises of Sudanese Cosmetics which are located in El Bageer Industrial Area, Wilayat El Gezira. The following areas will be built.

MAIN PRODUCTION AREA
In this area the product filling equipment, the water bath and the packaging area will be located.
The required area will be of 40 m x 10 m x 4 m H.
Electricity supply: 3 phases for power and illumination (standard system).

Supply of compressed air at 8 bar pressure. Supply of water connections for the water bath. Drain connections to be provided.

The floors should be epoxy finished.
The walls and ceilings should be dust free and smoothly finished.
Air coolers should be provided to keep the temperature inside the working area cool.

Doors and windows should be built with the best dust free construction materials available.

Portable extinguisher for the production area to be installed (CO_2 for electrical fire; powder for flammable liquids and CO2 liquid fire extinguisher) for cardboard and paper.

Special window at the factory wall for the conveyor which connects the product room with the gas house should be built. Details will be provided by Aerofill by 15 January 1997.
The electrical connections for the gas house should be located inside the production area. Details for location of electrical connections and for the panels will be provided by Aerofill by 15 January 1997.

Local extraction terminals inside the production area should be provided in the following points: test bath; test bath reject container, actuator placing area and over the cap placing area. For the above system a fan provided with explosion proof motor is required, ducts connections to the indicated points to be installed.

The dividing wall between the mi.xing area and the production area should be capable to retain fire expansion for one hour as minimum.

MIXING AREAS

For insecticides

Required area: 5 m x 5 m x 6 m H with smooth water proof painted walls and a retaining basin around the mixing tanks capable to contain the content of one vessel in case of accident.

Water supply to wash the tank and drainage system to be built.

air supply at 8 bar.
Explosion proof lighting.
Steel structure to hold the tank which supplies the product to the filling machine by gravity.
Pipeline from the mixing tank to the filling line should be built in Stainless Steel 304.
Ventilation-extraction system in the room should be of explosion proof construction.

For deodorants

Required area: 5x5x6mH, with smooth water proof and alcohol resistant painted walls and a retaining basin around the mixing tanks as well as around the filter.

Water supply to wash the tanks and drainage facilities to be provided.
Explosion proof connections and illumination.
Pipeline from the mixing tank to the filling machine should be made of Stainless Steel 304.

COLD STORES

Required area: 5x12 m.
Dust free finished for walls and ceiling.
Explosion proff electrical connections.
One side of the room should be adjacent to the outside wall to allow the connections to the transfer refrigerators.

GAS HOUSE

Concrete platform of 4 x 4 m should be built. the upper level of the platform should be 150 mm below the level of the production area. The distance between the wall of the production area and the gas house should be 1 m.

LPG STORAGE AND PURIFICATION AREA.

The tanks should be located parallel to the building. The distance between the edge of the any tank to the nearest building should be 15 m. Because of the location of the plant and the availability of high protecting wall it could be possible to reduce the mentioned distance to 7.5 m. Between the two tanks it is necessary to have 1.5 meters distance.

The storage vessels should be protected from the sun shine, special roof should be placed to achieve the above. The distance between the top of the tank and the roof should be around 3 m. the storage and purification area should be fenced with two entrances. Compressed air and 3 phases electricity supply should be provided to the storage area.

Detailed lay out for the tank farm, pump set and purification columns will be provided by Aerofill by 15 January 1997.

DELUGE SYSTEM

For the above a water storage capacity which would allow a minimum of 45 minutes of fire fighting should be built by Sudanese Cosmetics Water cooling sprinkler system over the tanks should be built.

COMPRESSORS ROOM

Required area 5 x 5 m. Standard construction with standard lighting and 3 phase power

DM WATER PLANT

Required area 5x5 m.standard lighting 3 phase power and coter supply

LABORATORIES

Required area 5x5 m. walls smotth paint or impervious paint finish, sngle phase pwoer and standard lighting.

DRESSING ROOMS FOR MALES AND FEMALES & TOILETS

Two rooms of 5 x 10 m each including washing area and areas provided with double lockers are required.

OFFICES AND SERVICE AREA.

Required area: 5x5 m. paint with standard lighting and single phase pwoer supply

SCOPE OF SUPPLY

Due to unforeseen changes of the supplier of the aerosols cans, the project manager Mr. Haddad requested UNIDO to replace the magnetic water bath foreseen for the plant by an universal water bath. The above will permit test the aluminum cans which will be utilized in the future. Taking into consideration that the required equipment is more expensive than the one was originally foreseen, the subject was discussed with Aerofill representative to determine whether it would be possible to exchange the items within the available resource of US $25,000. Mr. Russell will inform UNIDO on the subject within two weeks after consultations with the company managers.

TIME SCHEDULE

Taking into consideration that the delivery period for the plant equipment is estimated within a period of 6 months, it is expected that the Sudanese Cosmetics staff will have the civil construction works completed by end of July 1997 and the plant ready to start the installation works and proceed to the commissioning of the plant..

Two specialists from Sudanese Cosmetics will travel to UK for one week training before the shipment of the equipment to Sudan.

GENERAL ASPECTS

Aerofill will provide information about the tools and instruments required for the performance of the installation works. Also specifications about those explosion proof electrical connections required for the correct completion of the project, which should be supplied by Sudanese Cosmetics in order the company could purchase them on time to be delivered as per plant schedule requirements.

Signed in Khartoum on 15 December 1996 by:

Mr. E. Haddad	Mr.R. L. Russell	Ms. M. Sanchez
Sudanese Cosmetics	Aerofill	UNIDO