

**FOR UKOOA COUNCIL: 9 NOVEMBER 1994 [AGENDA ITEM 6.2]**

**U.K. OFFSHORE OPERATORS ASSOCIATION  
(Surveying and Positioning Committee)**

# **UKOOA DATA EXCHANGE FORMAT**

**P5/94**

## **PIPELINE POSITION DATA**

**blank page**

# **Contents**

## **Executive Summary**

- 1. Introduction**
- 2. Media Specification**
  - 2.1 Tape**
  - 2.2 Disk**
  - 2.3 Tape and Disk Labelling**
- 3. Header Record Specification**
- 4. Data Record Specification**
- 5. End of File Record**

**P5/94 – Pipeline Position Data**  
October 1994  
Issue 1

**blank page**

**P5/94 – Pipeline Position Data**

October 1994

Issue 1

# Executive Summary

The P5/94 format is available to members to facilitate the exchange of pipeline, other subsea flowlines, umbilicals and power cables' position data.

Use of this format, which is a revision of the P5/86 format is not mandatory but it is strongly recommended that it be used wherever possible.

Comments and suggestions for improvement of the format are welcome and should be addressed to:

The Chairman  
Surveying and Positioning Committee  
UKOOA  
3 Hans Crescent  
London SW 1 X OLN

**blank page**





# 1. Introduction

UKOOA format P5/94 is intended to facilitate the exchange of position data for pipelines, flowlines, umbilicals and power cables offshore. (Collectively referred to here as pipelines). It allows the inclusion of some data in addition to pure coordinate data but is not intended to be used as an inventory of pipeline condition.

The data required for pipeline position are the Latitude and Longitude, Easting (E), Northing (N), Depth, Kilometre Point (KP), and feature where applicable, together with coordinate datum and projection parameters.

All coordinates within a file must be in a single coordinate system as given in the header records, i.e. if a pipeline crosses a grid zone boundary then a separate file for each zone is required. Similarly a separate file is required for each pipeline within a zone, i.e. if a feeder line is joined by tee-piece to a gathering line then one file is required for each pipeline.

**blank page**



## 2. Media Specification

### 2.1 Tape

Half inch magnetic tape	:	IBM compatible
Number of tracks	:	9
Number of bytes per inch	:	6250 - standard (1600 or 800 are permissible)
Mode	:	Coded EBCDIC or ASCII
Record Length	:	80 bytes
Block Size	:	8000 bytes Blocks physically separated by inter-record gap. (1600 bytes for 1600/800 bpi)

### 2.2 Disk

Format	:	MS-DOS IBM PC Compatible
Size/Capacity/Density	:	3.5 in / 1.4MB / Double
Mode	:	Coded ASCII
Record Length	:	80 bytes with CR/LF after character 80.

In the interest of standardisation 3.5 x 1.4MB disks have been chosen as standard. Other formats and media are acceptable by prior arrangement between the affected parties.

Where floppy disks are used the filename should be the pipeline number e.g. PL999.UKA.

### 2.3 Tape and Disk Labelling

Each tape or disk should be adequately labelled so that its format and content can be readily ascertained. This labelling shall include, as a minimum: -

#### PIPELINE NUMBER AND NAME

Tape Data Format	:	Mode	:	Density	:	Block Size	:	Record
e.g. IBM	:	EBCDIC	:	6250 bpi	:	8000 bytes	:	80 bytes

Disk Data Format	:	Mode	:	Density	:	Capacity	:	Record
e.g. MS-DOS	:	ASCII	:	Double	:	720 k	:	80 bytes

Variations in the above specification may be allowed but only with the express agreement of all parties involved in the data exchange. In any event the tape reel should always be labelled with the specifications of the stored data.



Each pipeline shall form a logical file which shall consist of a complete set of "Header Records" followed by "Data Records". An EOF statement followed by an IBM file mark should be written at the end of a file.

In general a tape may consist of one or more files, and a tape should be closed by two IBM file marks.

### 3. Header Record Specification

Formats of parameter data fields for each of the header record types are: -

<b>TYPES</b>	<b>ITEM</b>	<b>COLS</b>	<b>FORMAT</b>
H31	"Name of pipeline:"	5-21	A17
	Pipeline name (from - to)	33-80	A48
H32	"Diameter of pipeline:"	5-25	A21
	Pipeline diameter, e.g. 12 inch	33-80	A48
H33	"Fluid in pipeline:"	5-22	A18
	Pipeline contents (Oil/gas/condensate/water)	33-80	A48
H34	"Pipeline operator:"	5-22	A18
	Name of pipeline operator	33-80	A48
H35	"Date of issue of tape:"	5-26	A22
	Tape issue date (dd mm yyyy)	33-42	2(I2,X),I4
H36X	"Positioning Contractor:"	5-27	A23
	Details of positioning contractor	33-80	A48
H37X	"Date of Survey:"	5-19	A15
	Date survey carried out (mm yyyy)	33-39	I2,X,I4
H38X	"Positioning system:"	5-23	A19
	Description of positioning system	33-80	A48
H39X	"KP Range for Survey:"	5-22	A18
	KP limits of data for particular survey	33-48	2F8.3
H40X	"Scale of Digitisation:"	5-26	A22
	Chart scale if coordinates produced by digitisation	33-80	A48
H411	"KP Origin:"	5-14	A10
	Description KP origin	33-80	A48
H412	"KP Origin Grid Coords:"	5-26	A22
	KP origin grid coords (East, North)	33-56	2(F11.2, A1)
	Grid description if different from file	57-80	A24

..





<b>TYPES</b>	<b>ITEM</b>	<b>COLS</b>	<b>FORMAT</b>
H413	"KP Origin Lat/Long:" KP origin coords (Lat, Long)	5-23 33-56	A19 2 (I3, I2, F6.3, A1)
H42	"Spheroid:" Definition of spheroid used for data (name, semi-major axis, reciprocal flattening 1/f)	5-13 33-56 57-68 69-80	A9 A24 F12.3 F12.7
H43	"Geodetic datum:" Geodetic datum description	5-19 33-80	A15 A48
H44	"Vertical datum:" Description of vertical datum for water depths (offshore survey) or elevations (onshore survey)	5-19 33-80	A15 A48
H45	"Projection type:" Type of projection	5-20 33-80	A16 A48
H46	"Projection zone:" Projection zone (including hemisphere for UTM)	5-20 33-80	A16 A48
H47	"Grid units: " Description of grid units	5-15 33-56	A11 A24
H48	"Standard parallel(s):" Latitude of standard parallels (d.m.s N/S)	5-25 33-56	A21 2(I3, I2, F6.3, A1)
H49	"Central meridian:" Longitude of c.m. (d.m.s E/W)	5-21 33-44	A17 I3, I2, F6.3, A1
H501	"Grid Origin:" Grid origin (Latitude, Longitude, d.m.s hemisphere)	5-16 33-56	A12 2(I3, I2, F6.3, A1)
H502	"Coordinates at grid origin:" Grid coordinates at grid origin (E, N)	5-31 33-56	A27 2(F11.2, A1)
H511	" Scale factor:" Scale factor at point given in H512	5-17 33-44	A13 F12.10



TYPES	ITEM	COLS	FORMAT
H512	"Scale origin" Latitude/longitude at which scale factor is defined (d.m.s/hemisphere)	5-17 33-56	A13 2(I3, I2, F6.3, A1)
H526	"Initial line of projection:" Latitude/Longitude of two points defining initial line of projection	5-31 33-56	A27 4(I3, I2, F6.3, A1)
H527	"Bearing of initial line:" Circular bearing of initial line of projection (d.m.s)	5-28 33-44	A24 I3, I2, F7.4
H528	"Bearing of initial line:" Quadrant bearing, of initial line of projection (N/S, d.m.s, E/W)	5-28 33-44	A24 A1, I2, F6.3, A1
H529	"Skew angle:" Angle from skew to rectified grid (d.m.s)	5-15 33-44	A11 I3, I2, F7.4
H53	Any other relevant information	5-80	A76

**Notes** Columns 1 to 4 of each Header Record are devoted to code for "type" of header e.g. H42, H501 etc.

Header "types" H36X to H40X may be repeated to cater for different sections of pipeline surveyed at different times or with different positioning systems, or derived by digitisation. (X in the range 1 to 9) e.g. H361 to H401 may be first survey whilst H362 to H402 may be a second survey etc. H40X should be set to 1 if not applicable.

Header record H53 may be repeated as often as necessary.

**blank page**



## 4. Data Record Specification

The general format for a data record is as follows:

Item	Description	Col	Format
1.	Record Identification for pipeline = "P"	1	A1
2.	Pipeline Identification Number e.g. PL999	2-17	A16
3.	Kilometre Post (KP) in kilometres to nearest metre	18-25	F8.3
4.	Latitude (d.m.s N/S)	26-35	I2, I2, F5.2, A1
5.	Longitude (d.m.s E/W)	36-46	I3, I2, F5.2, A1
6.	Map Grid Easting (metres)	47-55	F9.1
7.	Map Grid Northing (metres)	56-64	F9.1
8.	Water depth in metres to local seabed level (datum defined in header)	65-70	F6.1
9.	Feature code	71-73	I3
10.	Buried (B) / Exposed (E) Indicator	74	A1
11.	Trenched (T) / Untrenched (U) Indicator	75	A1
12.	Coordinate accuracy factor (metres)	76-79	I3
13.	Blank	80	

**Notes** Item 3. If KP distances are not computed for a particular pipeline columns 18-25 should be left blank.

Item 9. Features are identified by a three figure code as given in list below. Feature code can be extended but only by mutual agreement between parties involved in data exchange.

Item 12. An estimate of the absolute accuracy of the surveyed feature should be supplied since this will assist in planning future operations. Positional accuracy will obviously depend on methods employed to survey the pipeline and its features.





<b>Feature Code</b>	<b>Feature Description</b>
000	Pipeline Position
001	Spool Piece
002	500 m point from platform
003	T piece
310	Debris
500	Anode
501	Buckle Arrestor
502	Pipe bend
503	Flange
504	Valve
505	Protective structure (igloo)
506	Pipe clamp
507	Mechanical Connector
508	Other pipeline crossing over
509	Other pipeline crossing under
510	Grout Bag Support
511	Grout mattress
512	Anchor or saddle block
513	Remote CP potential monitor
514	Anode assembly (frame anode)
700	Other
701	Anchor scar
800	Field joint

Each feature must be assigned the most relevant code.

## 5. End of File Record

Each file is terminated by an EOF statement in columns 1 - 3 followed by an IBM file mark or two IBM file marks if also end of tape.

**blank page**

