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Introduction

This manual describes the data contained in the file on "Innovations in the UK since 1945: 1984 update", held at the SSRC Archive at Essex University. This file and manual supersede previous versions.

The file contains information on 4576 significant technical innovations which have been commercially introduced into UK industry and commerce between 1945 and 1983. The following three sections of this manual provide the format of each record, a description of the variables, and the various codes used to represent information.

The data were collected in three phases of postal questionnaire based surveys conducted in 1970, 1980 and 1983. We wrote to experts to obtain suggestions of innovations in different industries, and to the firms responsible to obtain more detailed information. We also obtained verification and ranking of some innovations from certain experts. The final section of this manual provides copies of the letters and questionnaires used.

DESCRIPTION OF VARIABLES

VARIABLE	POSITION IN RECORD LINE	CHARACTERS	FORMAT	DESCRIPTION	VALUE LIMITS	CODE LIST	UNKNOWN VALUE
Sequence No	1	1-4	4 digit int	Unique identification no for each innovation	1-5833 (not all nos are used)		None
Phase	1	6	1 digit int	No denoting survey phase in which data acquired	1=1970, 2=1980, 3=1983		None
Innovating Unit Code	1	8-11	4 digit int	Code representing innovating unit	Nos between 0 and 1829 which appear on code list	1	0
Unit Region Code	1	13-14	2 digit int	Code representing Standard Region of innovating unit location	0-11	5	0
Unit SIC	1	16-19	4 digit int	SIC of principal activity of innovating unit	Nos between 0 and 9500 which appear on SIC list	3	0
Unit Employment	1	21-26	6 digit int	Employment of innovating unit at time of innovation	0-999999		0
GB Employment	1	28-33	6 digit int	GB employment of largest ownership group at time	0-999999		0
World Employment	1	35-41	7 digit int	World employment of largest ownership group at time	0-9999999		0
Unit Status	1	43	1 digit int	Code representing status of innovation unit (independent, division, etc)	0-5	9	0
Parent Code	1	45-47	3 digit int	Code representing largest ownership group	Nos between 0 and 518 which appear on code list	2	0
Parent SIC	1	49-52	4 digit int	SIC of principal activity of largest ownership group	Nos between 0 and 9500 which appear on SIC list	3	0
Parent Land	1	54-55	2 digit int	Code representing nationality of largest ownership group	0-34	6	0
Internal Source	1	57	1 digit int	Code representing source of innovation within innovating unit	0-8	7	0
External Source 1	1	59-60)	2 digit int	Codes representing sources of innovation outside innovating unit	0-16	8	0
External Source 2	1	62-63)					
External Source 3	1	65-66)					
Source Land	1	68-69	2 digit int	Code representing country of origin of innovation	0-34	6	0
User SIC	1	71-74	4 digit int	SIC of principal activity of first user of innovation	Nos between 0 and 9500 which appear on SIC list	3	0
Year	1	76-79	4 digit int	Year of commercial introduction in UK of innovation	0, 1945-1983		0
Innovation SIC	1	81-84	4 digit int	SIC of innovation	Nos between 0 and 9500 which appear on SIC list	3	0
Technical Class 1	1	86-88)	4 digit int	Codes representing technical classifications of innovation	Nos between 0 and 484 which appear on code list	4	0
Technical Class 2	1	90-92)					
Technical Class 3	1	94-96)					
Expert Type	1	98	1 digit int	Code representing expert's classification of innovation by type	0-7	10	0
Firm Type	1	100	1 digit int	Code representing innovating units classification of innovation by type	0-7		0
UK First	1	102	1 character	Character denoting whether UK introduction was first in world	Space, y=yes, n=no		Space
First Use	1	103	1 character	Character denoting whether innovation first used by innovating unit	Space, y=yes, n=no		Space
App1	1	104	1 character	Answer to multichoice question 5 on application	Space, a-c		Space

Estab	1	105	1 character	Answer to multichoice question 6 on establishment	Space, a-d		Space
Funct	1	106	1 character	Answer to multichoice question 7 on achievement	Space, a-c		Space
Pat	1	107	1 character	Answer to multichoice question 8 on patents	Space, a-c		Space
Ref	1	108	1 character	Answer to multichoice question 9 on references	Space, a-c		Space
No of Sources	1	110	1 digit int	No of experts who suggested innovation	1-9		0
Self Source	1	112	1 digit int	No denoting whether innovating unit suggested innovation	0=no, 1=yes, 2=uncertain		0
Expert 1	1	114-115	} 2 digit int 1 character	Codes representing experts who ranked innovation Characters denoting ranking of innovation	0-50 Space, a=radical, b=significant, c=incremental, d=trivial	11	0 Space
Sig 1	1	117					
Expert 2	1	119-120					
Sig 2	1	122					
Expert 3	1	124-125					
Sig 3	1	127					
Year Agg	1	129	1 digit int	Year Group Code for year	0-8	12	0
Magg	1	131	1 digit int	Employment Group Code for Unit Employment	0-7	13	0
Gagg	1	133	1 digit int	Employment Group Code for GB Employment	0-7	13	0
Wagg	1	135	1 digit int	Employment Group Code for World Employment	0-7	13	0
Description	2	up to 255	0-255 characters	Description of innovation	Any character string up to 255 characters long		None
Advantages	3	up to 255	0-255 characters	Advantages of innovation	Any character string up to 255 characters long		Empty line
Features	4	up to 255	0-255 characters	The particular innovative features of the innovation	Any character string up to 255 characters long		Empty line

Note int = integer

1

CODE LIST 1 : INNOVATING UNIT

- 0 unknown
- 1 National Coal Board
- 2 Sainsbury R&D Ltd
- 3 Tunnel Refineries Ltd
- 4 Pearce Duff Ltd
- 5 Walls Ltd
- 6 J Lyons Ltd
- 7 Quaker Oats Ltd
- 8 Cross and Blackwell Ltd
- 9 Golden Wonder Crisps Ltd
- 10 Unilever Research (Bedford)
- 11 Unilever Research (Welwyn)
- 12 British Arkady Co
- 13 Alpin and Barratt Ltd
- 14 Kellogg Co Great Britain Ltd
- 15 H P Sauce Ltd
- 16 Brown Poulson Ltd
- 17 Barket and Dobson Ltd
- 18 Chivers Hartley Ltd
- 19 British Bakers Ltd
- 20 Affined Foods Ltd
- 21 Poultry Packers (Sussex) Ltd
- 22 Gracey Brothers
- 23 Needlers Ltd
- 24 Nestle Alimentalia
- 25 Alfred Bird Ltd
- 26 Expanded Rubber Ltd
- 27 Berger Laboratories Ltd
- 28 Parke Davies Ltd
- 29 Glaxo Laboratories Ltd
- 30 Cynamid (GB) Ltd
- 31 Pfizer UK Ltd
- 32 Beechams Pharmaceutical Div
- 33 Merck Sharp and Dohme Ltd
- 34 Roche Products Ltd
- 35 Selpharm Laboratories
- 36 Hoechst Pharmaceuticals
- 37 Boots Pure Drug Co Ltd
- 38 ICI Pharmaceutical Div
- 39 Searle and Co Ltd
- 40 Geigy UK Ltd
- 41 Ciba Laboratories Ltd
- 42 Selectus Ltd
- 43 Fisons Pharmaceutical Div
- 44 Smith and Nephew Research Ltd
- 45 Richard Thomas and Baldwins
- 46 Jessop Saville Ltd
- 47 International Nickel Ltd
- 48 Steel Co of Wales
- 49 British Steel Corporation
- 50 Parkgate Iron and Steel Co
- 51 Shelton Iron and Steel
- 52 Dorman Long Steel Ltd
- 53 Colvilles Ltd
- 54 Roundoak Steel Works
- 55 United Steel Company
- 56 GKN Forgings Ltd
- 57 English Steel Corporation
- 58 Stanton and Staveley Ltd
- 59 S Fox and Co
- 60 Steel Peach and Tozer Ltd
- 61 Hadfields Steels Ltd
- 62 Stewart and Lloyds Ltd
- 63 Stanton Ironworks Ltd

64 S and D Services Ltd
66 Dunford Hadfields Steels
67 Park Forge Ltd
68 Appleby Frodingham Ltd
69 Thomas Firth and John Brown Ltd
70 Millom Iron Ore Co
71 Barrow Steel Works
72 Catton and Co (Leeds) Ltd
73 Spartan Steels and Alloys Ltd
74 BASF UK
75 ICI Dyes Div
76 Ciba Clayton Ltd
77 Yorks Dyewear Co
78 Blythe Colours Ltd
79 Bayer UK Ltd
80 Geigy Holdings Ltd
81 English Electric Steam Turbine Div
82 James Booth Aluminium Ltd
83 High Duty Alloys Ltd
84 British Aluminium Ltd
85 John Dale Foundries Ltd
86 Distillers Ltd
87 Du Pont UK Ltd
88 Monsanto Chemicals Ltd
89 The Dunlop Rubber Co
90 Yorkshire Dyewear
91 ICI Plastics Div
92 Leicester Lovell and Co
93 Douglas Kane Group Ltd
94 Foster Yates and Thom Ltd
95 Rediweld Ltd
96 BXL Ltd
97 International Synthetic Rubber Co Ltd
98 Porvair Ltd
99 Thyssen (GB) Ltd
100 British Ropes Ltd
101 Ciba ARL Ltd
102 Contractors Plant and Supply
103 Esso Chemical Ltd
104 Goodyear Tyre and Rubber Co
105 Polypence Ltd
106 Sellers and Co (Huddersfield)
107 Chadwick Machine Co Ltd
108 Crepe Weavers Ltd
109 Boucher and Co Ltd
110 Stalwart Dyeing Co Ltd
111 James Mackie and Sons Ltd
112 Wilson Longbottom Ltd
113 David Crabtree and Sons
114 Platt Brothers and Co Ltd
115 British Tufted Machinery
116 Singer Cobble Ltd
117 BYC Engineers Ltd
118 A F Craig and Co Ltd
119 Donaghadee, Cyril Lord Carpets
120 F Uttley and Sons Ltd
121 Roypack Ltd
122 Dubied Machinery Co Ltd
123 Northrop Machinery Co Ltd
124 R Rhodes and Co Ltd
125 J T Hardaker Ltd
126 Ashton Brothers Ltd
127 Leesona Ltd
128 Petrie and McNaught Ltd
129 Bentley Engineering Ltd
130 J Haigh and Sons Ltd

131 William Cotton Ltd
133 Carrier Engineering Ltd
134 Courtaulds Ltd
135 Fairbain Lawson Ltd
136 D Frazer and Sons Ltd
137 Mullard Ltd
138 Union Carbide Ltd
139 Mollins Machine Tools Div
140 Chuchill Machine Tool Co
141 Fielding and Platt Ltd
142 Staveley Machine Tool Co
143 CVA Jigs and Tools Ltd
144 British Oxygen Co Ltd
145 David Brown Gear Industries Ltd
146 Abwood Machine Tool Co Ltd
147 H Hobson Ltd
148 Asquith Machine Tool Co
149 Staveley Research Dept
150 Wickham Wimet Ltd
151 Edgar Allen Engineering Co
152 Butler Machine Tool Co
153 Jones and Shipman Ltd
154 Westwind Turbines Ltd
155 Lodge Plugs Ltd
156 Sparcatron Ltd
157 Metachemical Machines Ltd
158 F E Rowland and Co Ltd
159 Newall Engineering Ltd
161 Kearney and Trecker Ltd
162 British Oxygen Research Unit
163 Elliot Brothers Ltd
164 David Brown Tractors Ltd
165 Harry Ferguson Ltd
166 John Deere Ltd
167 Austin Motor Corporation
168 Ford Tractor Operations Ltd
169 Nuffield Ltd
170 Roadless Traction Ltd
171 International Harvester Ltd
172 Jensen Motors Ltd
174 BMC (Scotland) Ltd
175 Massey Ferguson Ltd
176 Caterpillar Tractor Co
177 True Flue Ltd
178 Firth Cleveland Fans Ltd
179 S F Air Treatment Ltd
180 Ascot Water Heaters Ltd
181 Rosin Engineering Ltd
182 Rosser and Russel Ltd
183 Black Clawson International Ltd
184 Connon W G Air Eng'g Ltd
185 Blacks Mining Equipment Ltd
186 Birtley Engineering
187 Huwood Ltd
188 Mining Supplies Ltd
189 Dollery and Palmer Ltd
190 Blantyre Engineering Ltd
191 Simonaco Ltd
192 Mavor and Coulson Ltd
193 Dosco Overseas Ltd
194 Don Valley Engineering Ltd
195 Mine Safety Appliances Ltd
196 Dowty Mine Equipment
197 Dowty Meco
198 Decorit GB Ltd
199 Joy Manufacturing Ltd

200 Gullick Ltd
201 Anderson Boyce Ltd
202 British Jeffrey Diamond Ltd
203 Underground Mining Machinery
204 Victor Products (Wallsend) Ltd
205 Healey and Co
206 Colishaw Walker and Co
207 Hardypick Ltd
208 Markham and Co
209 A G Wilde and Co Ltd
210 Cable Belt
211 Bradley and Craven
212 Morden Industrial Appliances
213 F Malkin and Co
214 Service Engineers Ltd
215 Brecknell Polman and Rogers
216 British United Shoe Machinery Co
217 G Durrant (UK) Ltd
218 Walmsley (Bury) Group Ltd
219 Strachen and Henshaw Engineers
220 Easton and Johnson Ltd
221 Mount Hope Machinery Ltd
222 The Devibliss Co Ltd
223 Scottish Light Industries Ltd
224 Stratford Tool Machinery Co
225 International Shoe Machinery Co
226 Samuel Denison and Co Ltd
227 Morely Brothers (Huddersfield)
228 Fan Systems Ltd
229 William Snugg and Co
230 Emhart (UK) Ltd
231 Hepworth Iron Engineering Co Ltd
232 Applied Energy Systems
233 Wilkins and Mitchell Ltd
234 Packaged Chillers Ltd
235 Evershed and Vignoles Ltd
236 20th Century Electronics
237 Electronic Instruments Ltd
238 Dawe Instruments Ltd
239 Louis Neumark Ltd
240 C F Casella and Co Ltd
241 GEC (Radios and TV) Ltd
242 M O Valve Co Ltd
243 H A Gaydon and Co Ltd
244 Alarm Equipment Supplies Ltd
245 Rank Precision Industries Ltd
246 Electron and Physical Instruments Ltd
247 George Kent Ltd
248 Solartron Electronic Group
249 Pye Unicam Ltd
250 Cambridge Instrument Co Ltd
251 Reynolds and Branston Ltd
252 Vacuum Generators Ltd
253 Laser Associates Ltd
254 Hewlett Packard Ltd
255 Inertia Switch Co
256 Ferranti Ltd
257 William Thyne Ltd
258 Joyce Lobel Ltd
259 Crow Hamilton Ltd
260 Dynair Ltd
261 Gardners Transformers Ltd
262 Ealing Beck Ltd
263 Nichols Automatics Ltd
264 Muirhead Data Communications Ltd
265 Vickers Instruments Ltd

266 The Plessey Co Ltd
267 Whitehall Electronics Developments Ltd
268 Fielden Electronics Ltd
269 Optical Measuring Tools Ltd
270 Metal Detection Ltd
271 Newton Abbott Engineering Ltd
272 Thorn Automation Ltd
273 Salford Electrical Instruments
274 Baldwin and Francis Ltd
275 Barr and Stroud Ltd
276 Metals Research Ltd
277 International Computers Ltd
278 Phillips Electrical Ltd
279 Pye Printed Motors Ltd
280 Technograph Printed Circuits Ltd
281 Modern Automatic Alarms Ltd
282 Texas Instruments (UK) Ltd
283 Ferranti (Components)
284 GEC Marconi Electronics
285 STC Ltd
287 Morganite Resistors Ltd
288 Welwyn Electric Co
289 Hivac Ltd
290 Westinghouse Brake and Signal
291 AEI Ltd
292 Plessey Telecommunications
293 Decca Record Ltd
294 Post Office Corporation
295 E K Cole Ltd
296 Lowther Manufacturing Co
297 Acoustical Manufacturing Co
298 Reslosound Ltd
299 Racal Electronics Ltd
300 EMI Sound Products Ltd
301 Pye of Cambridge Ltd
302 Garrard Engineering Ltd
303 Marconi Ltd
304 Antiference Ltd
305 Burroughs Machines Ltd
306 Minnesota Mining And Manufacturing Co
307 Leo Computers Ltd
308 Sperry Rand Ltd
309 Elliott Automation
310 Granley Products (London) Ltd
311 H J Leak and Co Ltd
312 Budget Rentals Ltd
313 Clifford And Shell Ltd
314 Frowds Ltd
315 Memco Ltd
316 Applied Data Systems Ltd
317 Specto Avionics Ltd
318 Smiths Industries Aviation Div
319 AEI Research
320 EMI Research
321 Marconi Marine Ltd
322 Decca Radar Ltd
323 Securities Alarms Ltd
324 James Scott and Co Ltd
325 Smiths Industries Kelvin Hughes Div
326 Avimo Ltd
327 CTH Electronics
328 Shell Tankers Ltd
329 Foster Wheeler Boilers Ltd
330 W M Denny
331 Shell International Marine Ltd
332 Faifield S and E Co Ltd

333 Alex Stephens Shiprepairers
334 Vickers Shipbuilding (Barrow)
335 Christian Salvessen Ltd
336 Viking Marine Ltd
337 Constructor John Brown
338 William Redhead
339 William Doxford Ltd
340 Charles Connell Ltd
341 Appledore Shpbuilders Ltd
342 Swan Hunter Shipbuilders Ltd
343 Upper Clyde Shipbuilders Ltd
344 Rolls Royce Ltd
345 Metropolitan Vickers
346 Fibreglass Ltd
347 Harland and Wolff Ltd
348 Furness Shipbuilding Co Ltd
349 Bartrams and Sons Ltd
350 Zenith Carburettor Co Ltd
351 Telcalemit (Engineering) Ltd
352 The Rover Co Ltd
353 Wolesey Ltd
354 Standard Triumph Motors Ltd
355 Veloce Ltd
356 York Trailor Co
357 Alex Moulton Ltd
358 Cam Gears Ltd
359 British Leyland Motor Corporation
360 Borg Warner Ltd
361 Vauxhall Motors Ltd
362 Automotive Products Ltd
363 Pressed Steel Fisher
364 Ford Motor Co
365 Self Change Gears Ltd
366 British Motor Corporation
367 Leyland Gas Turbines
368 Lucas Electrical Industries
369 I and R Motley Ltd
370 English Electric Diesels Ltd
371 Borg and Beck Ltd
372 Aerial Motorcycles Ltd
373 Glacier Metal Ltd
374 British Celanese Ltd
375 Courtaulds Synthetic Fibres Div
377 ICI Fibres Ltd
378 McCleery and Lamie Ltd
379 Dobeckmun Brittain Ltd
381 Plasticisers Ltd
382 Synthetic Fabrics (Scotland) Ltd
383 British Ropes (Fibres and Plastics) Ltd
384 Woolcombers Ltd
385 Bulmer and Lumb Ltd
386 Jute Industrial Ltd
387 Boyle and Sons Ltd
388 Low and Bonar Ltd
389 W Gibson and Sons Ltd
390 Pretty Polly Ltd
391 Sketchley Textile Div
392 Pasoles Ltd
393 Gainsborough Cornard Ltd
394 Greenwood and Coope Ltd
395 Textelose Ltd
396 Walkden Carpets Ltd
397 Brintons Ltd
398 Samuel Dracup and Sons Ltd
399 Carpet Trades Ltd
400 A F Stoddard and Co Ltd

401 John Crossley Carpets
402 Debron Carpets Ltd
403 The Bradford Dyers Association
404 Dunlop and Co Ltd
405 Lancaster Carpets Ltd
406 Ferodo Ltd
407 Cape Insulation Ltd
408 Standish and Co
409 Norris Industries Rushden Ltd
410 Ellis Jones and Co Ltd
411 Webb and Sons Ltd
412 Nene Finishes (Notham.) Ltd
413 Stephens Belting Co
414 Gamshall Tanneries Ltd
415 C W Pittard and Co Ltd
416 Yarwood and Co Tanners
417 W L Ingle Ltd
418 Thos Hardman and Sons
419 Clarke Ltd
420 Eatoughs Ltd
421 Tebbutt and Hall Ltd
422 Lotus Ltd
423 Woodside Brickworks Ltd
424 Nottingham Patent Brick Co
425 Butterfly Brick Co
426 Bason and Sons Ltd
427 Foseco (FS) Ltd
428 Pilkington Bros
429 Triplex Safety Glass
430 United Glass Ltd
432 English Electric Co
433 Glass Bulbs Ltd
434 British Optical Co Ltd
435 British Heat Resisting Co
436 Rugby Portland Cement Co
437 G and T Earle Ltd
438 Wiggins Teape Ltd
439 Bowater Paper Corp Ltd
440 Samuel Jones and Co Ltd
441 Reeds Wallpaper Group
442 British Paper Co
443 Thompsons Board Mills
444 Trinity Paper Mills Ltd
445 Western Board Mills Ltd
446 Preston Paper Co
447 Towgood and Beckwith Ltd
448 Green Ltd
449 St Annes Board Mill
450 R and W Watson
451 Wolvecote Mill
452 C Davidson and Sons
453 Clyde Paper Co
454 James R Crompton
455 William Nash Ltd
456 Peter Dixon and Sons Ltd
457 Huyck Ltd
458 Brittain's Ltd
459 Ashton Containers Ltd
460 Jointline Products Ltd
461 Inveresk Paper Ltd
462 Rotax Ltd
463 Associated Engineering R&D
464 E N Mackley and Co
465 CAV Ltd
466 GEC Hirst Laboratory
467 York Technical Services

468 British Leather Manufacturers R A
469 ICI Chemicals Ltd
470 Lockheed Precision
471 Westland Helicopter Ltd
472 DeHavilland Aircraft
474 Giddings Lewis and Frazer
475 Albright and Wilson
476 James Beard Ltd
477 Lhanwern Group
478 Eadie Bros and Co
479 Silicone Treatment Ltd
480 CFA Electrical Ltd
481 Proctor and Gamble
482 Research Lab for Collective Chemistry
483 Allen West Ltd
484 Domeston
485 Colgate-Palmolive
486 C A Parsons Ltd
487 Associated Portland Cement Co Ltd
488 Allied International Ltd
489 Coultar Electronics
490 Forestal Land Timber and Rail Co
491 John Thompson Pipework Division
492 Gibbons Bros
493 Wedgewood and Sons Ltd
494 Stothert and Pitt Ltd
495 Metaller Ltd
496 C H Johnson (Machinery) Ltd
497 Broads Manufacturing Co
498 Economic Foundations Ltd
499 R M Douglas (Construction) Ltd
500 Cementation Ground Engineering Ltd
501 Taylor Woodrow (Construction) Ltd
503 Grove Paper Mill
504 Flexadux Plastics
505 British Aircraft Corporation
506 Birlec Ltd
507 Rover Car Co Gas Turbine Div
508 Tenstar Ltd
509 Milk Marketing Board
510 Flour Milling and Baking R A
511 Lockheed Hydraulic (UK)
512 Aylesford Conversion Section
513 Tashworth
514 AEI Semiconductors
515 Andrew Engineering
516 Aptel Marine
517 Analytical Instruments
518 Aim Physical Sciences
519 Automatic Systems Laboratory
520 Allied Colloids Ltd
521 Armshire-Sherville Plastics
522 Autoflow Engineering
523 Airflow Developments
524 APV Parafreeze Ltd
525 Arma Systems
526 Anderson Strathclyde
527 Anderson Mavor Ltd
528 Austin Hoy
529 A J Bingley
530 BCMS Security Systems
531 BOAC Managemant Services Dept
532 BP Ltd
533 Blue Circle Industries
534 BAC Guided Weapons Div
535 BDH Chemicals

536 BOC Welding Products Div
537 BP Proteins Ltd
538 Babcock Bristol Ltd
539 Britten Norman
540 Burmah Castrol Industrial
541 Banglea Ltd
542 BOC Subocean Services
543 BICC Telephone Cables Div
544 BP Chemicals Ltd
545 Bonded Fibre Fabrics Ltd
546 Thomas Burnley and Sons Ltd
547 Bryans Southern Instruments Ltd
548 Brentford Electric Ltd
549 Bluemels Bros Ltd
550 Chloride Automotive Batteries Ltd
551 Coloroll Ltd
552 Camber International
553 Henry Cooke Ltd
554 Corruplast Ltd
555 Crosfield Electronics
556 T C Centronic
557 Cape Boards and Panels
558 L G G Charlesworth
559 Cabinet Industries
560 Cobble Blackburn Ltd
561 Carding Specialists Co Ltd
562 Churchill Ltd
563 Ciba-Geigy Pharmaceuticals Ltd
564 Courtaulds Viscose Fibre Laboratories
565 Crane Packing
566 J Crosfield
567 Cossor Electronics
568 Crossfield Business Machines Ltd
569 The Carpet Manufacturing Co
570 Ciba-Geigy (UK) Ltd
572 Bexford Ltd
573 BTR Belting Ltd
574 Baker-Perkins Ltd
575 Dominic-Hunter Engineers Ltd
576 Derby Automation Consultants
577 Dunlop Oil (Marine Hose Div)
578 John Davies and Son (Derby) Ltd
579 Data Labs Ltd
580 Doulton (Tempered Glass) Ltd
581 Datron Electronics Ltd
582 Dista Products Ltd
583 Dual Furniture
585 Diamond Shamrock Chemicals
586 Dane and Co Ltd
587 Dunlop Tyre Technicals Div
588 Dean, Smith and Grace
589 Dowty Rotol
590 Engart Fans
591 Eurotherm
592 A N Engineering
593 English Electric Valve
594 Esso Petroleum Co Ltd
595 EMI-MEC Ltd
596 Ekco Instruments
597 Edwards High Vacuum
598 M S Gibb Ltd
599 G R International Electronics
600 T H Goldschmidt Ltd
601 John Gladstone and Co
602 Glanville-Reid Radionics Ltd
603 GMB Proteins Ltd

604 GEC Computers Ltd
605 Graham and White Instruments
606 Greenbank Engineering Ltd
607 GEC Semiconductors Ltd
608 Gould Advance Ltd
609 Hall Textiles (Mansfield) Ltd
610 Highams Ltd
611 A Herbert Machine Tools
612 Hunt and Moscrop Textile Machinery
613 H J Heinz and Co
614 James A Heal
615 John Hadland (Photographic) Ltd
616 Hunslet Mining Machinery Ltd
617 Herbert and Son Ltd
618 Hawker Siddeley Aviation Ltd
619 International Yacht Paints
620 Jaguar Cars Ltd
621 ICI Plant Protection Div
622 First Inertia Switch Co
623 Fisons Agrichemical Div
624 Fronde Engineering
625 Fletcher Bros
626 Instron Ltd
627 ICI Organics Div
628 ICI Agricultural Div
629 International Ceramics
630 Integrated Photomatrix Ltd
631 Instrument Colour Systems
632 J C Bamford Excavators Ltd
633 John and E Sturge Ltd
634 Keighley Grinder Ltd
635 H G Kippax and Sons
636 Marwin Ltd
637 Lucas Aerospace Electronics Div
638 SGRD Ltd
639 Leyland Vehicles
640 Linecross Plastics Ltd
641 Lucas CAV Ltd
642 Linotype-Paul Ltd
643 Lansing Bagnall Ltd
644 Lensfield Products
645 Movalarm Ltd
646 Mastiff Security Systems Ltd
647 Metal and Alloys (Birmingham) Ltd
648 Matthew Hall Engineering Ltd
649 Microsal Ltd
650 Platt International
651 Platt Saco Lowell
652 Platt Sizing
653 Platt Longclose
654 WIRA
655 Edgar Pickering (Blackburn)
656 Proban Ltd
657 Bonas Machinery Co Ltd
658 Marconi Communication Systems Ltd
659 Micro Consultants Ltd
660 Moore and Wright (Sheffield) Ltd
661 Marconi-Illingworth
662 McKay Foods Ltd
663 Farmitalia Carlo Erba Ltd
664 Montedison (UK)
665 Manchester Metal Works Ltd
666 Micron-Sprayers Ltd
667 Mintex Ltd
668 Malthus Instruments Ltd
669 Monotype International Ltd

670 Marconi Instruments Ltd
671 Membrain Ltd
672 Mather and Platt (Process Machinery) Ltd
673 May and Baker Ltd
674 Mini Tunnels International
675 Morgan Refractories
676 Mining R&D Establishment
677 Northern Tool and Gear Co
678 Nuclear Enterprises Ltd
679 Netlon Ltd
680 Novo Enzyme Products
681 Sir James Farmer Norton
682 National Institute of Agricultural Engineering (NIAE)
683 Paxman Diesels Ltd
684 J Hibbert
685 Pressure Dynamics
686 Plessey Semiconductors
687 Plessey Opto and Microwave
688 Allen Clarke Research Centre
689 PERA
690 Profile Expanded Plastics
691 Process Peripherals Ltd
692 Perkin Elmer Ltd
693 Photoscan Ltd
694 Plastona (John Wadd) Ltd
695 Plastic Coating Ltd
696 Battenfield (England) Ltd
697 Perkins Engines Ltd
698 Polyolefric Fibres and Engineering Ltd
699 Portex Ltd
700 P O Telecommunications Dept
701 Precision Process Textiles
702 Quinton Hazell Ltd
703 Hydewell Suspensions
704 Rothampstead Experimental Station
705 Racal Safety
706 Redfearn National Glass
707 Racal Dana Instruments
708 Racal Redac
709 Refrigeration Aberdeen Ltd
710 T W Riley (Rochdale) Ltd
711 Reckitt and Coleman Pharm. Div
712 R E and D S Ltd
713 Rolinx Ltd
714 Redifon Flight Simulation
715 Rowntree Mackintosh and Co
716 Rudgwick Brickworks Ltd
717 Renishaw Electrical Ltd
718 Rachem Ltd
719 Stewart Plastics
720 Scott Bader Co Ltd
721 Sorex Ltd
722 Snow and Co Ltd
723 W E Sykes Ltd
724 William R Selwood Ltd
725 Shell Chemicals UK Ltd
726 Scopex Instruments Ltd
727 Stuart Pharmaceuticals Ltd
728 Ernest Scragg and Son
729 Simon Vicars Ltd
730 Syntex Pharmaceuticals Ltd
731 Scandura Ltd
732 T P T Ltd
733 I T Superform Ld
734 TBA Industrial Products Ltd
735 T I Matrix Ltd

736 Tredomen engineering Ltd
737 UKAEA Research Establishment
738 Risley Nuclear Power Development Group
739 Howson Algraphy Group
740 Vision Engineering ltd
741 Viking Engineering Ltd
742 Vosper Thorneycroft (UK) Ltd
743 Veeder Root Ltd
744 Thomas Walker and son Ltd
745 Winthrop Labs
747 Wickman Scrivener Ltd
748 Wardhill Automaotive Design
749 Yorkshire Imperial Plastics
750 British Ship Research Assn
751 Tate and Lyle (Engineering) Ltd
752 Tate and Lyle (Refineries) Ltd
753 Tate and Lyle Research Centre
754 Spillers Foods Ltd
755 Weetabix Ltd
756 Chance Pilkington
757 Appleby Calumite Ltd
758 Pilkington PE Ltd
759 Pilkington Flat Glass Ltd
760 Royal Signals and Radar Establishment
762 BBC Engineering Research
763 Fodens Ltd
764 Fidus Controls Ltd
765 Turner Engineering Ltd
766 DJB Engineering Ltd
767 Dunlop New Products Div
768 Dunlop Vehicle Braking Systems
769 Lucas Girling Ltd
770 Short Bros Ltd
772 Certex Ltd
773 Decca Navigator Ltd
774 Decca Survey Ltd
775 James Seccombe Ltd
776 MSE
777 Marconi Avionics Ltd
778 Marconi Space and Defence Systems
779 Marconi Research Labs
780 Railko Ltd
781 Westerland Engineering
782 Racal Communications
783 Eickhoff (GB) Ltd
784 Sinclair Radionics Ltd
785 Radyne Ltd
786 Thorn Lighting Ltd
787 Vickers Oceanics Ltd
788 Elliot Flight Automation Ltd
789 Wellcome Foundation
790 English Clays Lovering Pochin Ltd
791 K Hughes Maritime Service
792 Hudswell Yates Developments
793 Smith Kline and French Labs Ltd
794 Rotheroe and Mitchell Ltd
795 Pitcraft Ltd
796 Molins Ltd
797 Healey Mouldings Ltd
798 BICC Winding Wires Div
799 British Copper Refineries Ltd
800 Bencard
801 Crown Windley Ltd
802 A W Warr
803 Brookdeal Electronics Ltd
804 Spembly Ltd

805 B and S Massey Ltd
806 Serck Audco Valves
807 Samuel Pegg Ltd
808 Dowty Hydraulics Ltd
809 University of Nottingham
810 Oxford Instruments Ltd
811 Johnson and Johnson Ltd
812 Biorex Labs Ltd
813 Elite Engineering Ltd
814 Computer Technology Ltd
815 National Semiconductors Ltd
816 Penny Giles Conductive Plastics Ltd
817 Malvern Instruments Ltd
818 MSEL Microwave Div
819 MSEL Radar Div
821 APV Co Ltd
822 CJB Offshore Ltd
823 Dimo Ltd
824 Gullick Dobson Ltd
825 GKN Windsor Ltd
826 Du Pont Plastics Div
827 Metal Box Ltd
828 Farnell Instruments
829 A Herbert Machine Tools Ltd Boring Div
830 Robert MacGregor and Sons Ltd
831 British American Optical Co
832 Sulzer Brothers Textile Machinery Div
833 Sulzer Brothers UK
834 A E Aspinall Ltd
835 B L Engineering Ltd
836 G W Thornton and Sons
837 Crowther Ltd
838 Duncan Fox Industrial Sales Ltd
839 Barke Machinery Ltd
840 Mecart Textiles
841 SNIA Viscosa (UK) Ltd
842 EGK Textile Machinery and Accessories
843 Europa Machines Ltd
844 R S Maynard Ltd
845 R Greenbank and Co
846 George Fisher (Sales) Ltd
847 Savio (GB) Ltd
848 Unitech (Service) Ltd
849 Negretti and Zambra Ltd
850 ICI Petrochemical Div
851 Taylor and Littlewood Ltd
852 Butterworth and Dickinson
853 Klinger Manufacturing Co
854 Shirley Developments
855 Volumatic Ltd
856 Hewlett Packard R&D
857 GEC Machines Ltd
858 Rolls Royce Aero Div
859 Wildt Mellor Bromley Ltd
860 Cummins Engine Co Ltd
861 Karl Mayer UK Sales Ltd
862 Glaessner (Bury) Ltd
863 Simplex GE Ltd
864 Leon Beckaert (UK) Ltd
864 A to S, Hull
865 Automotive Products Precision Hydraulics
866 Ferranti Computers
867 Ferranti Electronics Ltd
868 Stewart and Lloyds Plastics Ltd
869 BSC Bridgestreet
870 BSC Brightside

871 BSC Ravenscraig
872 BSC Teeside Labs
873 BSC Tubes Div
874 BSC Stockbridge
875 BSC Strip Mills
876 BSC Scunthorpe
877 BSC Dalzell Unit
878 BSC Panteg
879 Davy Ashmore International
880 Davy Loewy (Sheffield)
881 Davy Loewy (Loewy Robertson Div)
882 Davy Loewy (Iron and Steel Div)
883 BSC Sections (Middlesborough)
900 Black and Decker
901 Hawker Siddeley Revenue
903 Brush Transformers Ltd
904 Portec (UK) Ltd
906 Conder Ltd
907 Celcon ltd
908 D Anderson & Sons Ltd (subsid BPB Ind)
909 British Gypsum Ltd
910 Coles Cranes
911 Wylie Safe Load Indicators
913 Hymack Ltd
914 Jones Cranes ltd
915 Ransomes & Rapier PLC
916 SKF (UK) Ltd
917 Priestman Bros Ltd
918 Shell Research Ltd
919 Hawker Aircraft
920 British Aerospace
921 British Aerospace, Aircraft Group, Filton Division
922 British Aerospace, Aircraft Group, Preston Division
923 Fuller Electric (HSPT),
924 Building Research Establishment
925 OCL Containers Ltd
926 Associated Containers Transportation Ltd
928 McAlpine Services and Pipelines Ltd
929 British Hoist and Crane Company
930 W Edwards
931 National Institute for Research in Dairying (NIRD)
932 Fullwood and Bland
933 SMC Ltd, Bridgewater Somerset
934 Colt Ltd, Fareham, Hants
935 Vent Axia Crawley
936 Electricity Council
937 Phoenix Burners Ltd
938 Satchwell Controls Ltd
939 Andrews Weatherfoil Ltd
940 Myson ltd
941 Property Services Agency
942 Frenger Ltd
943 Bass plc
944 Brewing Research Foundation
945 Watney
946 Allied Breweries
947 Deloro Stellite, Swindon
948 Charles Thackray, Leeds
949 Downs Surgical, Mitcham
950 D Howse & Co, Lymington
951 Berger Paints
952 ICI Paints Division
953 John Hall (Bristol and London)
954 Hercules Powder Co (UK) Ltd - subsidiary Hercules USA
955 Tenneco Marlos Ltd - subsidiary Teneco Chemicals
956 Tenneco Organics Ltd - subsidiary Teneco Chemicals

957 Hydraulic Engineering Co Ltd
958 Richard Irvine Ltd, Aberdeen
959 Biccotest
960 Delta Metals
961 Wilkinson Rubber Linatex Co
962 Croft Imprensa Ltd
964 Afos Ltd
965 Thermair Domestic Appliances
966 National Freight Corporation
967 Smiths Industries, Putney Division
968 Airscrew-Weyroc
969 Hille ltd
970 Furniture Industries Research Association (FIRA)
971 Caberboard ltd
972 WDM Ltd
973 British European Airways
974 British Airways
975 Leathers Chemical Co
976 Howden Compressors
977 APV Hall International, Dartford
978 Smiths & Partners Ltd
979 British Aerospace, Dynamics Group, Space Division
980 Michelin
981 Uniroyal
982 University of Cambridge
983 Forestry Comission
984 William Clarke & Sons Ltd
985 James Jones & Sons, Lerbart Scotland
986 Rapco Electronics, Basingstoke
987 ML Engineering
988 Dunlop Aviation Division, Filton
989 Permaquip - The Permanent Way Equipment Co. Ltd
990 Thwaites Ltd, Leamington Spa
991 Wimpey Marine Ltd
992 BP Shipping Ltd
993 Seaforth Marine
994 Shearwater Marine
995 Bowker Air Services Ltd
996 Lurmark Ltd
997 Shoe and Allied Trades Research Association
998 Central Electricity Generating Board
999 various
1000 H S Marsh
1001 Fibrax Ltd
1002 Bruce Anchors, Edinburgh
1003 Houlder Offshore, Leadenhall Street London
1004 British Hovercraft Corporation
1005 P and O
1006 University of Strathclyde
1007 Wells Kraut Kramer
1008 RM Fabrications
1009 Gas Measurements Instruments
1010 Wellman Selas
1011 Research Engineers Ltd
1012 J Woodhead & Sons Ltd
1013 Laidlaw Drew & Co Ltd
1014 University of Leeds
1015 G P Burners Ltd
1016 Stott Benham Ltd
1017 Twyford Moor
1018 Smiths Instruments
1019 Sycopel Scientific Ltd
1020 GEC
1021 British Rail
1022 A E Beckett & Sons
1023 H & R Ecroyd Ltd

1023 HP
1024 University of Reading
1025 Scaffolding (GB) Ltd
1026 Evode
1027 British Industrial Products
1028 Smith and Walton
1029 Cray Valley Products Ltd
1030 J A Bede
1032 Goodlass Wall
1033 Cistermiser Ltd
1034 Acco
1035 Dymo Ltd
1036 IBM
1037 Royal Aircraft Establishment
1038 Imperial College
1040 People Mover Group
1041 ICI
1042 Frigidaire
1043 Prestcold
1045 Taylor Diving
1046 Mobell Marine
1047 Petrocarbon Developments
1048 Thermit Welding (UK) Ltd
1049 Dexion
1050 Fourways Engineering
1051 Abbot Bros, Southall, Middlesex
1053 Ferranti Navigation
1054 Ferranti Edinburgh
1055 Ferranti Electro Optical
1056 Normalair-Garrett
1057 Salem Herr Voss
1060 Downmac Ltd
1061 Pandrol Ltd
1062 Tempered Spring Co
1063 Olympus Optical Co (UK) Ltd
1064 British Standards Office
1065 British Nuclear Fuels Ltd
1067 GEC Turbine Generators
1068 GEC Gas Turbines Ltd
1069 GEC Measurement Ltd
1070 Micanite & Insulators Co Ltd
1071 GEC Stafford Laboratory
1072 GEC Mechanical Engineering Laboratory
1073 GEC Rectifiers Ltd
1074 GEC Telecommunications Ltd
1075 McMichael Ltd
1076 GEC Traffic Automation
1077 GEC Traction
1078 Express Lift Co Ltd
1079 GEC Electrical Projects
1081 Redring Electric Ltd
1082 Marconi Radar Systems
1083 Hall Automation ltd
1084 Brook Crompton Parkinson Motors
1085 Brush Electrical Machines Ltd
1086 University of Bristol
1087 Brush Electrical Engineering Ltd
1088 Hawker Siddeley Dynamics
1089 Henry Lindsay
1090 BICC Power Cables
1091 BICC General Cables
1092 BICC Metals Ltd
1093 BICC Research & Engineering
1096 Ajax Domestic Appliances Ltd
1097 John Senior & Co ltd
1098 Gayday Domestic

1099 GEM Reprographic Sales Ltd
1100 Horsley Bridge
1101 PSC Freyssinet
1102 Freeman Fox
1103 Messers Sandberg
1104 BSC Structural Marketting
1105 Welding Institute
1106 Birmingham & Midland Motor Omnibus Co
1107 Bristol Commercial Vehicles
1108 Head Wrightson
1109 Encomech Engineering
1110 Canon (UK) Ltd
1111 T D Williamson
1112 Frank Wood (Riking) Ltd
1113 ADM Systems Ltd
1114 Conoco
1115 NMI
1116 HMD Pumps
1117 Weir Pumps
1118 GEC Special Contracts
1119 Plessey
1120 Chatham Dockyard
1121 Napier Diesels
1122 Regulators Europe Ltd
1123 Ricardo Consulting Engineers
1124 GEC Mechanical-Handling
1125 Bishop Price & Partners
1126 International Paint (Marine Coatings)
1128 Origa (UK) Ltd
1129 Rank Xerox
1130 Vokes
1135 Vibro-meter Ltd
1136 United Dairies Engineering Co
1138 Alvin Blanch Development Co Ltd
1139 Archie Kidd Ltd
1140 Howard Rotivator
1141 Bettison (part of Hestair Farm Equipment Ltd.)
1142 Smallford Planters
1143 Lely Import
1144 Vicon
1146 Fahr (GB) LTD
1148 Star Offshore Services
1149 Stirling Shipping Co Ltd
1151 RDI (Agriculture) Ltd
1152 RA Lister Ltd
1153 Bonslor Engineering Co Ltd
1154 Atkinsons, Clitheroe
1155 Coopes
1156 Bamford & Evershed
1157 John Wilder & Son
1158 National Cash Register Ltd
1159 Crochetta Ltd
1160 AMF Clarbo
1161 Vilene Ltd
1162 Clifton Styles Ltd
1163 V P R (Clothing) Ltd
1164 Taunton Electronics Ltd
1165 Com Plan Technology Ltd
1166 UMEL
1167 Slingsby Engineering
1168 OSEL
1169 Underwater Maintenance Co Ltd
1170 Butterworth Systems (UK) Ltd
1171 Key Med
1172 Marine Technology Unit
1173 FR Hughes Ltd

1174 VO Offshore (was Vickers Offshore)
1175 Subsea Operatons P&O
1176 DeHavilland Propellors
1177 Strainstall Ltd
1178 Armstrong Whitworth
1179 Osram
1180 Marconi Electronic Devices Ltd
1181 Temperature Ltd
1182 Haden Control Engineering
1183 Charnley Howarth Ltd
1184 Novenco
1185 Copperad Ltd
1186 Steel Radiators Ltd
1187 Danfoss
1188 Pressurisation Ltd
1189 Broag Ltd
1191 Neotronics
1192 Permutit
1193 Macawber
1194 Norton Motors (1978) Ltd
1199 Chloride Group
1200 Chrysler
1201 Rigby Metal Components
1202 Powdrex
1203 Scottish Farm Buildings Investigation Unit
1204 Strathearn Pig Producers
1205 Westend Poultry Ltd
1206 Agricultural Development and Advisory Service (MAFF)
1207 Farm-X
1209 European Profiles
1210 Hambro Life
1211 Clerical, Medical, and General Insurance Ltd
1212 Intel (UK) Ltd
1213 AJA Matchless
1216 Triumph Motor Cycles Ltd
1217 Kawasaki
1218 Honda
1219 British Hydromechanics Research Association
1220 Roneo
1221 Concept Infinitive Ltd
1222 Mackie
1223 Picanol
1224 Lambeg Industrial Research Association
1225 Albright & Wilson Agricultural Division
1226 Aveling Barford
1227 Matbro
1228 Imperial Tobacco
1229 Filtrana
1230 Gallaher
1231 Express Dairies Ltd
1232 Federation of Milk Marketing Boards
1233 Wincanton Engineering Ltd
1234 Dairy Crest
1235 NRDC
1236 Lucas Industries
1237 BTH
1238 Airship Industries
1239 Vickers Supermarine
1240 Dowty Boulton Paul
1241 Dowty Maritime
1242 Dowty Fuel Systems now Dowty Smiths Industries Controls
1243 Dowty Seals
1244 Gerber Scientific (UK) Ltd
1245 Optical Textile Ltd
1246 Shaw Trew & Smith
1247 Needham Bros & Brown

1248 Lindley Ltd
1252 Honeywell
1253 Steyfor
1254 Appelby and Ireland
1255 Royonic
1256 ICI Nobel
1257 Yorkshire Imperial Metals
1258 Racal Avionics
1259 MEL Equipment Co Ltd
1260 Truseal Ltd
1261 Hindle Valve Co Ltd
1262 Yamaha
1263 Metropolitan Borough of Bury
1264 Motherswell Bridge Tacol Ltd
1265 Buhler Miag (England) Ltd
1266 S Windon (Waste) Ltd
1267 Bernard McCartney Ltd
1268 London Brick Landfill Ltd
1269 Wiggins Alloys ltd
1270 Hydros
1271 H D A Forgings Ltd
1272 IMI Titanium Ltd
1273 Long Products Ltd
1274 Ruston Diesels Ltd
1275 Kodak Ltd
1276 Polaroid
1277 Ilford
1278 Polychrome
1279 Nimslo
1280 British Steel Plating Co
1281 Fugro Ltd
1282 McLelland Engineers
1283 Frederick Parker
1284 Greenings
1285 Floated Ltd
1287 Wilkinsons Furniture Ltd
1288 Horton Electronics
1289 Immediate Business Systems
1290 Plysu Housewares
1291 Mars Money Systems
1292 Vickers Office Equipment
1293 Fernox
1294 Catalin Ltd
1295 Brimtyre Ltd
1296 Crompton Parkinson Vidor
1297 Bewes and Co
1298 Air Ministry
1299 National Engineering Lab
1300 AML
1301 IMI Plc
1302 ERF
1303 Laporte
1304 Dentsply
1305 Addis
1306 High Definition Films Ltd
1307 Rank Taylor Hobson
1308 Rank Cintel
1309 Pye TVT
1310 Eschmann Bros and Walsh
1311 Compair Construction and Mining Ltd
1312 Coutrose Engineering Ltd
1313 Kenrich and Jefferson
1314 State Style Ltd
1315 Autoclude Ltd
1316 Jaffa Inc
1317 Kegwain Ltd

1318 Lastonet Products ltd
1319 Lokata Ltd
1320 Redgill Fishing Lures
1321 Sensitisers (Western) Ltd
1322 Watson Marlowe Ltd
1323 Jones Seperators Ltd
1324 Richard Mozely Ltd
1325 Logica Ltd
1326 Verdict Ion Technology Ltd
1327 Andantex
1328 Sun Alliance
1329 Abbey Life
1330 Legal and General Assurance Society
1331 Eagle Star
1332 K P Pinson
1333 Dr M W Johnstone
1334 Prof G Hounsfeld
1335 Cardiac Recorders Ltd
1336 S E Labs Ltd
1337 Wilkinsins Sword
1338 Butterworths
1339 William Clowes
1340 British Library
1341 Sound Techniques Ltd
1342 Ballotini
1343 Prismo Universal
1344 Tillotsons
1345 Richard Clay Book Publishers
1346 Shropshire Star
1347 Guardian
1348 Nottingham Evening Post
1351 Cambridge Evening News
1352 Southampton Evening News
1353 Huddersfield Daily Examiner
1354 Birmingham Post
1355 Leicestr Advertiser
1356 Financial Times
1357 Daily Express
1358 Devices Ltd
1360 Formaflow Ltd
1361 Centrum Electronics Ltd
1362 Minster Automation Ltd
1363 Pye - TMC Ltd
1364 Telephone Rentals Ltd
1365 Redifusion Computers Ltd
1366 Starlink Chains Ltd
1367 Rose Forgrove
1368 Export Software International
1369 Mastiff Electronic Systems
1370 Sankey Vending Ltd
1371 Philips Electronics Ltd
1372 Johnsen and Jorgensen (Plastics) Ltd
1373 Mullard Research Labs
1375 Marine Exploration (Marex)
1376 Hamilton Bros
1377 EMH
1378 Thorburn and Partners
1379 British Underwater Engineering
1380 University of Manchester
1381 Saipem
1382 Sony Broadcast Ltd
1383 Bristol Siddeley
1385 DHB
1386 Highland Fabricators
1387 Thompon Welding and Inspection
1388 Alan Webb

1389 Kongsberg
1390 Phillips Petroleum
1391 Shell Expro
1392 Shell Europe
1394 A Norris
1395 Peter Brotherswood
1396 Strongwork Diving (Int)
1397 GWB Ltd
1398 J Stone Ltd
1399 Allen Ygnis
1400 Fulton Boilers (UK) Ltd
1401 Gibson Wells
1402 NEI Cochrane
1403 Teledyne
1404 Measurex (UK) Ltd
1405 Heerema
1406 Dunphy Burners (Oil and Gas) Ltd
1407 Spooner Drying Energy Co
1408 Scope Dryers
1409 Sadac
1410 Reed Paper Group
1411 New Taplow Paper Mill
1412 Scott Bowater
1413 J and J Makin
1414 Thames Broadmills
1415 Richard Klinger (UK) Ltd
1416 Reed and Smith
1417 Smith Stone and Knight
1418 Vickers Design and Projects
1419 McAlpine Seatank
1420 Institute for Oceanic Sciences
1421 Don Hore
1422 Magflo
1423 Epic Products Ltd
1424 Datachem Ltd
1425 Consort Engineering
1426 Sterilin
1427 DRG
1428 Gillette
1429 Telephone Cables Ltd
1430 Submarine Cables (Sales)
1431 Coopers and Lybrands
1432 Mardrive Ltd
1433 A Quilligoth
1434 JEL Energy Conservation
1435 Brinksway Plating
1436 Roger Bywater Engineering Ltd
1437 Dawnpress Ltd
1438 Prudential Assurance Ltd
1439 Liverpool Water Witch and Marine Engineering Co Ltd
1440 Bamlett
1441 Hayter (UK) Ltd
1442 Inmos
1443 J M Keen
1444 Sony (UK) Ltd
1445 G T Wright Ltd
1446 B D Josephson
1447 Meteorological Office
1448 Lawson et al
1449 Sasnowski, Starkiewicz, Simpson
1450 D T N Williamson
1451 J A Sargrove
1452 R H Alderton
1454 Multitone Co.
1455 Frys Metal Foundrys Ltd
1456 P J Baxandall

1457 Ericsson Telephones
1458 P J Walker
1459 Duracell Ltd
1460 Leever-Rich Equipment Co
1461 Quad
1462 Wimpey Laboratories
1463 Picker International Ltd (new owners of Cambridge Instruments)
1464 Balfour Beatty Power Construction Co
1465 Skampton
1466 Maurice Gibb and Partners
1467 P K Morgan Ltd
1468 Dawe Ultrasonic
1469 3M Health Care Products
1470 Benson Electronics
1471 A G A Geotronic (UK) Ltd
1472 Westwood Micro Systems Ltd
1473 Newbury Electronics
1474 Modular Communications Ltd
1475 Strathclyde County Council
1476 Packfast Ltd
1477 Wipex Products
1478 Marco Electronics
1479 Institute of London Underwriters
1480 John Shaw and Sons (Salford) Ltd
1481 Magistrates Courts (Nottingham)
1482 Sumlock Comptometers
1483 Decimo
1484 Hugin Cash Registers
1485 A E S Ltd
1486 Apple Computers Ltd
1487 M S I International
1488 Autopack Ltd
1489 Cadburys Ltd
1490 Inpack Automation
1491 J & P Eng.
1492 Dawson Harmsworth Ltd
1493 S R A Services
1494 Armstrong Motor Cycles
1495 W A L Phillips Injectors Ltd
1496 Phillips Business Systems
1497 Pye Telecommunications Ltd
1498 British Sugar Corporation
1499 British Gas
1500 Harris Intertype Ltd
1501 D E P Ltd
1502 Protocol Engineering Ltd
1503 McLaughlin Machinery Ltd
1504 Gildmore Press Ltd
1505 Rawlings Ltd
1506 Plastotype Ltd
1507 Hunter Penrose Littlejohn (Midlands) Ltd
1508 Timsons Ltd
1509 Pictorial Machinery Ltd
1510 Witton James (GEC) Ltd
1511 Auto-Feeds (London) Ltd
1512 Aerostyle Ltd
1513 Crabtree Mann Ltd
1514 F Horsell and Co
1515 Digital Equipment Ltd.,
1516 Ozalid Ltd
1517 NV Tools Ltd
1518 Henry Booth
1519 Cornwall Press (IPC) Ltd.,
1520 The Book Machinery Co Ltd.,
1521 JCJ Ltd
1522 Tilbury Container Services

1523 Abbey Steelworks
1525 Minolta
1526 Kramer
1527 Bell Punch Co Ltd
1528 Thorburn (Walter) Ltd
1530 Nickeloid Ltd
1531 Hazell Sun (BPC) Ltd
1532 Read and Nicoll (Typesetters) Ltd
1533 Marcann Colour Proofing (UK) Ltd
1534 Coates Bros. and Co
1535 Letraset Ltd.,
1536 Muirhead Ltd.,
1538 Fairchild
1539 Beves and Co Ltd.,
1540 Rainham Timber Engineering Co Ltd
1541 H Newsum and Co Ltd
1542 Dunlop Ltd., Dunlopillo Division
1543 Greaves and Thomas Ltd
1544 Arkana Ltd
1545 Hewetson and Co J A Ltd
1546 Hull Traders Ltd
1547 UKAEA Wantage Research Laboratory
1548 Irvin and Sellers Ltd
1552 Advanced Materials Engineering
1553 Bulova
1554 Dow Chemicals
1555 N S U
1556 Swift and Co
1557 Telequipment
1559 British Leyland - Welligborough Foundry
1560 Richard Buckmeister
1561 Fairey Engineering
1562 Flymo
1563 Cookson Sheet Metal Ltd.,
1564 GEC Lighting
1565 Metro Vickers
1566 Electrical and Musical Industries
1567 Willard Langden
1568 BEAIRA
1569 Research Corporation
1570 Sheffield Star
1571 Epofeam International Ltd
1573 Thermoplastics Ltd.,
1573 Dalton Electronics
1574 Frontier Medical Products
1575 Fuel Pumps Ltd
1576 Malden Care
1577 Shandon Southern Products
1578 Becket and Co (Surgical Instruments) Ltd
1581 British Telecom
1582 Measurement Technology Ltd
1583 SPQR Engineering Ltd
1584 Maxwell Bus Transmissions Ltd
1585 Brookes and Gatehouse Ltd
1586 Boothroyd Stuart Ltd
1587 Dunlop Sports Co
1588 Paines-Wessex Ltd
1589 Sinclair Research Ltd
1590 RHP Bearings Ltd
1590 Centaline Clutch Release Bearings Ltd
1591 Keith Hancock Structures Ltd
1592 Mousley Trucking Ltd
1593 E M Wilcox Ltd
1594 Alumasc Ltd
1595 D H Prowse and Co Ltd
1596 Britax (Winguard) Ltd

1597 British Rail Engineering Ltd
1598 Racal Amplivox Ltd
1599 Digico
1600 Ultra Electronics Ltd
1601 SME Ltd
1602 Microcycles Ltd
1603 Sperry Vickers (European) Group
1604 A W Showell (Surgicraft) Ltd
1605 Mecanuids Ltd
1606 Graseby Medical
1607 Locat Developments Ltd
1608 Rees Instruments Ltd
1609 Britax-Excelsior Ltd
1611 Bramah Security Equipment
1612 Crabtree Electronics Industries Ltd
1613 Imaging Technology Ltd
1614 Ambic Equipment Ltd
1615 Executive Products Ltd
1616 John Garton Ltd
1617 Fast Engineering Co Ltd
1618 Bennett Safety Wear Ltd
1619 Bates Textile Machine Co
1620 Bailey Concepts Ltd
1621 Atlantic Plastics Ltd
1622 Andra Jewels Ltd
1623 Air Instruments Resources
1624 Derwent Measurement and Control Ltd
1625 Allen Martin Electronics Ltd
1626 Burns and Godfrey Ltd
1627 Checkmate Ltd
1628 Copely Developments Ltd
1629 Allmat Ltd
1630 Hi Density Plastics Ltd
1631 JFK Engineering Fife Ltd
1632 Lion Rock Holdings Ltd
1633 J M Henshaw Marine Ltd
1634 Nodecrest Ltd
1635 Noisco Developments Ltd
1636 Ravenfield Designs Ltd
1637 Rofin Ltd
1638 Tre Wolf Safety Lamp Co
1639 SB Electronic Systems
1640 Unilab Ltd
1641 Teaching Wall Systems
1642 Stonefield Omicron Electronics Ltd
1643 Key Pneumatics Ltd
1644 Sphinx Security Services Ltd
1645 Cameron Iron Works
1646 Loxley Medical Division (of Texales Ltd)
1647 Owen Mumford Ltd
1648 Pneupac Ltd
1649 Oxoide Ltd
1650 Vickers Ltd
1651 Clement Clarke International Ltd
1652 AWD Electric Vehicles
1653 Craven Tasker (Sheffield) Ltd
1654 V L Churchill Ltd (T I Transport Ltd)
1655 Bowden Controls Ltd
1656 Haldo Developments Ltd
1657 Amstad Systems Ltd
1658 Electrolocation Ltd
1659 Baugh and Weedon Ltd
1660 Vango (Scotland) Ltd
1661 Bowens (Sales and Services) Ltd
1662 Hypoguard Ltd
1663 William J Gornall Ltd

1664 Leslie Hartridge Ltd
1665 M and G Tankers Ltd
1666 Wonderclip Ltd
1667 Rabone Chesterman Ltd
1668 British Fly Reels Ltd
1669 Wadkin Machine Tools
1670 Expandite Ltd
1671 Rota Bolt Ltd
1672 Lancer Boss Ltd
1673 Waterfield Valves Ltd
1674 RNLI
1675 Flexible Diamond Tool Co Ltd
1676 Felton Fluid Handling Ltd
1677 Greenspar Connectors Ltd
1679 Plessey Avionics and Communications Ltd
1680 Datson Electronic Products
1681 Westcode Semiconductor Ltd
1682 Le Tounerau
1683 Blawknox
1684 Fairey Aviation Ltd
1685 Martin Baker Aircraft Co
1686 Westland Aircraft Ltd
1687 British Aerojet Ltd
1688 Sternol Ltd
1689 Sandoz Products Ltd
1690 Fisons Industrial Chemicals
1691 Domestos Ltd
1692 Fluidrive Engineering Ltd
1693 Burlington Engineering Ltd
1694 Pyrene Co Ltd
1695 Kings Langley Eng Co Ltd
1697 A C E Machinery Ltd
1698 Whitlock Bros
1699 J H Caruthers and Co Ltd
1700 R Cort and Sons Ltd
1701 F G Wilson (Eng) Ltd
1702 Modern Industrial Appliances
1703 De Vilbis Co Ltd
1704 Stafford Tool Machinery Co Ltd
1705 Keith Blackman Ltd
1706 Norsel and Templewood Hawksley Ltd
1707 W C Holmes Ltd
1708 Loewy Robertson Eng Co Ltd
1709 Gas Council of Great Britain
1710 John Player and Sons
1711 Westclox Ltd
1712 Hackbridge Farady Electrics Ltd (Alan West Ltd)
1712 Hockbridge Faraday Electrics
1713 British Insulated Callender Cables
1714 GKN Group Laboratory
1715 Star Aluminium Ltd
1716 William Adams Ltd
1717 Bullers Ltd
1718 Shanks and Co Ltd
1719 W T Copeland and Sons Ltd
1720 Polycell Ceramics Ltd
1721 Johnson Matthey Printed Products Ltd
1722 BTR Industries Ltd
1723 British Belting and Asbestos Co
1724 Commercial Plastics Ltd
1725 Dynasafe Ltd
1726 Rose-Morris and Co Ltd
1727 Lytag Ltd (J Laing Research and Development Ltd)
1728 J Laing Research and Development Ltd
1729 Wates Computer Services Ltd
1730 Thermalite Ltd

1731 Edmonton Borough Council
1732 Bristowes Machinery Ltd
1733 British Liftslab Ltd
1734 Wignett Ltd
1735 Bellrock (Midlands) Ltd
1736 Expanded Piling Co Ltd
1737 Reed and Mallik Ltd
1738 Concrete Ltd
1739 Boulton and Paul (SC) Ltd
1740 Richard Lees Ltd
1741 Power Gas Co
1742 Ballard Owens Ltd
1743 E Dean and Beal Ltd
1744 Cannon Industries Ltd
1745 Ministry of Technology
1746 Titanienne Ltd
1750 South Western Gas
1751 N Thames Gas Co
1752 Davy United
1753 Firth Vickers
1754 BSC Redcar
1755 BSC Templeborough
1756 Sheerness Steel
1757 Firth Brown
1758 Cray
1759 Arrow
1760 J Laing
1761 Liquid Paper (Europe) SA
1762 Hitachi
1763 Pirelli
1764 Dolby
1765 Goldring
1766 Falmer Jeans
1767 Hotpoint
1768 Marples Ridgeway
1768 Perbury
1769 National Health Service
1770 Volvo
1771 Castrol
1772 Crown Paints
1773 NEI
1774 National Westminster Bank
1775 Microwriter
1776 Bellis
1777 Hughes Aircraft
1778 NTT
1779 Petters
1780 ICI Mond Division
1782 General Signal Co
1783 Marchon Products
1784 Becorit GB Ltd
1785 Dunlop Aviation Division - Coventry
1786 Dunlop and Co Ltd - GRG Division
1787 English Electric - Aircraft and Generator Turbines
1788 Colchester Lathe Co
1789 ICI Metals Division
1791 International Marine Ltd
1792 NCB Central Engineering Establishment
1793 NCB and BCURA (joint venture)
1794 Norton Motor Cycle Company Ltd
1795 Wimpey Offshore Ltd
1796 Burroughs Wellcome
1797 Chester Beatty Research Institute
1798 ITT
1799 3M
1800 Ampex

1801 Atari
1802 Miller (UK) Ltd
1803 Chubb
1804 Spooner Dryer Engineering Co
1805 Plastechnol Ltd (Farnborough)
1806 Lintott Engineering
1807 Mobil
1808 Parker Pen Co
1809 Douglas
1810 Pulp and Paper R I of Canada
1811 Beloit
1812 Johnson and Philips
1814 Champion
1815 BR Steel Piling
1816 J Cousteau
1817 Kelvin Hughes
1818 Portacabin
1819 Ward Leonard
1820 Eimco
1821 Tube Investments
1822 Shell Oils
1823 Subsea Offshore
1824 Burkle and Co.
1825 Prefinish Metals
1826 Comic Inc.
1827 ICI Billingham
1828 James Machine Co.
1829 Volkswagen UK
1830 Northwest Paper Mill Co.
1831 Institute for Geophysical Sciences
1832 IRIS (ESROI)
1833 Telegraph Construction & Maintenance Co
1834 Timex
1840 Courtaulds Chemical Div
1841 Courtaulds Research
1842 University of Dundee
1843 TDA
1844 Potter
1845 Marples Ridgeway

1

CODE LIST 2 : PARENT

0 unknown
1 none
2 Nestle Alimentana Co
3 Unilever Van der Berghs
4 Ward Foods Ltd
5 Kellog Corp USA
6 IMNS
7 Corn Products Ltd
8 Scribbans Ltd
9 Schweppes Ltd
10 Rank Hovis McDougal Ltd
11 General Foods Corp
12 BXL Ltd
13 Fisons Ltd
14 Parke Davis Inc USA
15 Cynamid Inc USA
16 Pfizer Inc USA
17 Beecham Group
18 Merck Sharp and Dohme USA
19 Hoffman la Roche
20 Les Laboratoire Servier
21 Hoechst
22 Sainsbury
23 Searle Chicago Ltd
24 Geigy (Switzerland) Ltd

25 Ciba (Switzerland) Ltd
26 Smith and Nephew Group
27 BSC
28 Firth Brown Group
29 International Nickel Canada
30 Tube Investments Ltd
31 GKN Group
32 Vickers Group
33 United Steels
34 Dormer (SL) Ltd
35 BASF FRG
36 ICI Ltd
37 Ciba (Basle)
38 Bayer FRG
39 Geigy (Basle)
40 English Electric Co
41 Hawker Siddeley Group
42 Metal Closures Group
43 Data Metal Co USA
45 Du Pont USA
46 Monsanto USA
47 Yorkshire Dyewear Group
48 Borden Chemical Co USA
49 Distillers Co
50 Chloride Energy Storage Co
51 Thyssen Engineering
52 Westland Aircraft
53 Esso Petroleum Corp
54 Electrical and Industrial Securities
55 Goodyear USA
56 Polymer Corp USA
57 Stone Platt Group
58 Singer Cobble Ltd
59 Irwell Springs Ltd
60 Viyella International
61 E Dubied S A Switzerland
62 British Northrop Ltd
63 Leesona Corp
64 London and Midland Group
65 Sears Holdings
66 Bentley Engineering Ltd
67 Platt International
68 Carrier Engineering
69 Phillips Industries
70 Union Carbide Group
71 Herbert Machine Group
72 Craven Swift Group
73 David Brown Corp
74 Staveley Machine Tools
75 Wickham Group
76 B Elliott Group
77 Universal Grinding Co
78 Asquith Machine Tool
79 Newall Machine Tools
80 Kearney Trecker Group
81 British Oxygen Co Ltd
82 Elliott Automation
83 Harry Ferguson Holdings
84 Deere and Co USA
85 British Leyland Motor Corp
86 Ford Motor Corp
87 British Motor Corp
88 International Harvester Corp USA
89 Norcross Ltd
90 British Motor Holdings
91 Massey Ferguson USA

92 Caterpillar USA
93 Firth Cleveland Ltd
94 Svenska Flaktfabriken
95 Black Clawson USA
96 Fan Systems Group
97 Simon Engineering Ltd
98 Anderson Mavor Ltd
99 Mines Safety Co USA
100 Dowty Group
101 Joy Manufacturing Co USA
102 W M Park and Co
103 Jeffrey Gallion USA
104 Gewerschaft Eisenhuelte
105 John Brown and Co
106 Thompson Marshall and Co Ltd
108 United Shoe Machinery Corp USA
109 Dickinson and Robinson Group
110 Reed and Smith Group
111 Mount Hope Machinery SA Switzerland
112 De Vibliss USA
113 International Shoe Machinery Co
114 Emhart Corp USA
115 The Hepworth Iron Co
116 Winson Group
117 Sevisair Group
118 General Electric Co
120 The Rank Organisation
121 Schlumberger Group
122 Pye Group
123 George Kent Ltd
124 Hewlett Packard USA
125 Marden Packaging Corp
126 Associated Engineering Group
127 Plessey Group
128 Whitehall Group
129 Lancashire Dynamo
130 Texas Instruments Dallas USA
131 Ferranti Group
132 Standard Telephones and Cables USA
133 Morgan Crucible Corp
134 Royal Worcester Co
135 Hirc General Instrument Group
136 Westinghouse Brake and Signal USA
137 Dacca Group
138 EMI Ltd
139 Racal Group
140 Antiference Group
141 GEC (USA)
142 Minnesota Mining and Manufacturing
143 J Lyons and Sons
144 Sperry Rand Ltd
145 Electroheating Ltd
146 Smiths Industries
148 Group 4 Total Security
149 James Scott Holdings
150 Royal Dutch Shell Group
151 Swan Hunter Group
152 Cam Pears Group
153 Borg Warner
154 General Motors Corp USA
155 Lockheed Hydraulic USA
156 Leyland Motors Ltd
157 Joseph Lucas
158 Automotive Products Associated Ltd
159 BSA Group
160 Courtaulds Ltd

161 Dobeckmun Co USA
162 British Ropes Ltd
163 Woolcombers Holdngs
164 Bulmer and Lumb Holdings
165 Low and Bonar Group
166 Thomas Tilling Group
167 Sketchley Co Ltd
168 Coats Patons Ltd
169 Carpet International
170 Glenpatrick Investments Ltd
171 Carpet Manufacturing Co
172 Dunlop Group
173 Turner and Newall
174 Cape Asbestos Ltd
175 John White Wootwear
176 Gamshall Group
177 C J Clark Group
178 John James Ltd
179 The Butterfly Group
180 Pilkingtons
181 United Glass Ltd
182 Associated Rugby Portland Cement
183 Wiggins Teape
184 Reed Paper Group
185 Ribble Paper Mill
186 Imperial Tobacco
187 P Dixon Holdings
188 Huyck Corporation
190 AED (R&D) Ltd
191 Clarke Chapman Co
192 York Trailer Co
193 Procter and Gamble USA
194 Palmolive
195 Reyrolle Parsons Group
196 Allied International Ltd
198 Johnson Matthay Ltd
199 Wellington Tube Group
200 Wedgewood Group
201 Cementation Ltd
202 Taylor Woodrow Ltd
204 Cope Allman Ltd
205 Birlec Group
206 Rover Car Co Ltd
207 Borce Dean
208 Unitech Ltd
209 Aim of Cambridge
210 The APV Group
211 Court Line Group
212 Dept of Industry
213 Anderson Strathclyde
214 BOAC
215 British Aircraft Corp
216 E Merck
217 Dresser Industries Inc
218 BP Co Ltd
219 Babcock and Wilcox
220 Burmah Group
221 BICC Ltd
222 Plantation Holdings Ltd
223 Chloride Group
224 J Bibby and Sons
225 Ruberoid
226 Charter Consolidated
227 Ciba-Geigy
228 Raytheon
229 BTR Group

230 Baker-Perkins Holdings
231 Doulton Group
232 S Pearson and Sons
233 Eli Lilly
234 Diamond Shamrock Corp
235 H H Robertson USA
236 Exxon Corp
237 Glaxo Holdings
238 Clarke and Smith Industries
239 Goldschmidt AG
240 Gladstone Group
241 Gould Inc USA
242 A Herbert Ltd
243 Hunt and Moscrop (Middleton) Ltd
244 H J Heinz Inc
245 International Paint Co
246 First Security Group
248 Instron Corp USA
249 Denbyware Ltd
250 Muirhead Ltd
251 Kennetside Holdings Ltd
252 JCB Excavations Ltd
253 BBA Group Ltd
254 FMC Ltd
255 Matthew Hall Group
256 Marwin Group
257 Montedison Group
258 Mintex
259 GB International Electronics
260 Monotype Corp
261 Mather and Platt
262 Rhonepoulenc France
263 William F Ress Co
264 National Coal Board
265 Novo
266 The 600 Group
268 Syntex Corp
269 The Perkin Elmer Corp
270 Sonoco USA
271 Thorn Group
272 Fairburn Lawson Ltd
273 UKAEA
274 Gallaher Group
275 Western Pacific Drug Industries
276 Sterling Drug USA
277 BAT Industries Ltd
278 Rennualt Corp USA
279 British Shipbuilders
280 Tate and Lyle Ltd
281 Spillers Ltd
282 Appleby Slag Co
283 BBC
284 Bunzl Pulp and Paper Co
285 The Laird Group
286 Caplan Profile Group Ltd
287 John Waddington Ltd
288 Battenfeld FRG
289 Readycut International Ltd
290 Post Office Corp
291 Stevensons (Dyers) Ltd
293 Reckitt and Coleman
294 Redifon-Rediffusion Ltd
295 Rudgwick Claywork Co Ltd
296 Raychem Corp USA
297 Ward Blenkinsop Group
298 Monarch Machine Tool

299 Albright and Wilson Ltd
300 Gidney Security Ltd
301 Eickhoff FRG
302 Trafalgar House Investments Ltd
303 The English China Clays Group
304 Finance for Industry Ltd
305 Smith Kline Corp
306 Eltra Corp
307 E G & G Inc USA
308 British and Commonwealth Shipping
309 B and S Massey and Sons Ltd
310 Serck Ltd
311 IMI Ltd
312 Oxford Instrument Group
313 Johnson and Johnson USA
314 National Semiconductors Corp
315 Penny and Giles Group
316 MSEL
317 Boots Group
318 Dobson Park Group
319 Farnell Electronics Group
320 James Neil Holdings Ltd
321 Fleming and British American Optical
322 Sulzer Bros
323 Bowater Corp
324 SNIA Viscosa Italy
325 Duple Group
326 George Fischer AG Switzerland
327 Negretti and Zambra
328 Richard Klinger Group
329 Shirley Institute
330 Rolls Royce Ltd
331 Cummins Engine Co USA
332 Karl Mayer AG
333 N V Bekaert Belgium
334 Cambridge Instrument Corp
335 Davy Corp
336 Fielding and Platt Group
337 Birtley Group
339 English and Overseas Investments
340 Triplex Holdings
341 DeHavilland Aircraft Holdings
342 Pharos AB
343 Associate company jointly owned by several steamship lines
344 British Steel Company
345 Acco World Corp
346 Leadenhall Stirling
347 Consultants to MOD
348 Black and Decker Manufacturing Co
349 BDB Industries plc
350 British Leyland
351 Bridon plc
352 British Technology Group
353 Department of Environment
354 Bullova Co.
355 Bisonwerk Bahre & Greton gmbH
356 Cadbury Schweppes plc
357 Yattenden Investment Trust
358 Ministry of Defence
359 Acrow plc
360 Conder International plc
361 Conaco Inc
362 IPC Ltd
363 De La Rue Co plc
364 Danfoss A/s
365 Lucas Group plc

366 Becker Prunte GmbH
367 Steel Bros Holding plc
368 Dentsply International Inc
369 Dexion Comino International Ltd
370 Digital Equipment Corp.
371 Dow Chemical Co
372 Dart and Kraft Inc
373 ERF (Holdings) Inc
374 Mechatherm Engineering Ltd
375 L. Ericsson
376 RTZ
377 Frank Horsell Group Ltd
378 Electrolux
379 Foseco Minsep
380 British Aerospace
381 British Airways
382 British Gas
384 British Rail
385 Canon
386 Thorn;EMI
387 W.G.Allen
388 Cookson Group
389 Gerber Scientific Instrument co
390 Gillette Co
391 Fugro BV
392 Fulton Inc
393 Hamilton
394 Harris Intertype Group
395 Hayters Ltd
396 British Publishing Co.
397 Hercules Powder Corp
398 Hewetson Holdings
399 Lake & Elliott
400 Honda Giken Kabushiki
401 Honeywell Inc
402 NEI
403 Heerema
404 Howden Group
406 Hunter Penrose
407 IBH Holdings
408 Charles Colston Group
409 IBM
410 Meyer International
411 Jonas Woodhead
412 Johnson/Jorgensen Holdings
413 Kawasaki Heavy Industries
414 Eastman Kodak Co
415 Kongsberg Vapenfabrikk A/s
416 Laporte Industries Holdings
417 MCP Holdings
418 Esselte AB
419 London Brick Co
420 MSI Data Corporation
421 Mars Inc
422 Seatank/McAlpine joint company
423 Sir A McAlpine and Sons Ltd
424 Texas McLelland Engineers Inc
425 Metal Box plc
426 Michelin
427 Minolta Camera Co.
428 Whitburgh Investments
429 Mobil Corporation
430 Motherwell Bridge Group
431 Multitone Group
432 Myson Group
433 does not operate in UK

434 NCR Corp
435 Norton Villiers Triumph
436 Forman Hardy & Co
437 Olympus Optical Co
438 Oxalid Group Holdings Ltd
439 Pearce Duff Holdings
440 Portals Holdings plc
441 Picanol Weefaulomaten NV
442 Plysu Group
443 Polaroid Corp
444 Polychrome Corp
445 Portec Inc
446 Haden Group
447 Suter Co.
448 Allied Plant Group
449 Norwest Hoist
450 Phoenix Timber Group
451 The Rank Organisation/Xerox joint company
452 Central and Sherwood plc
453 British Electric Traction
454 Johnson and Firth Brown
455 Klinger Group
456 C Cr D'Electricite SA
458 Short Bros and Harland
459 British Underwater Engineering Group
460 Stratsforetag AB
461 J Sainsbury plc
463 SGB Group
464 North of Scotland College of Agriculture
465 ITT
466 P & O
467 Swift Meat Corpn
468 Landis Machine Co.
469 Tenneco
470 BOC/Elektro Thermit GmbH joint company
471 St Regis (International) Paper co
472 Amylum NV/Staley Manufrg/Tate & Lyle joint company
473 Gwerkshaft Eisenbutte
474 Uniroyal Co
475 Bondina Ltd
477 Wellman plc
478 Smith Kline Beckman Corp
479 Alleghany International
480 Harrisons Crossfields
481 Hillsdwn Holdings
482 George Wimpey plc
483 Yamaha
484 Associated Containers plc
485 BPM Holdings Ltd
486 Furness Withy
487 Marine Engineering
488 Philips Petroleum
489 Phillips/Cambridge Electrical Industries joint company
490 Sony
491 T D Williamson Inc
492 J. Laing
493 Liquid Paper Co
494 Texates
495 Origa AB
497 Prefinish Metal Inc.
498 Comic USA
499 Fahr
500 Pirelli
501 Krupp
502 Buhler Miag
503 Volkswagen

504 Corning
505 Kodak Inc
506 Burroughs
507 Fairchild
508 Intel Inc.
509 Atari Inc.
510 Siemens
511 ATT
512 Hitachi
516 Britax
517 Quaker Oats Co USA
517 Volvo
518 Vicon
518 Hughes
519 Timex Inc.
530 Ampex
531 Cray
532 Crompton Parkinson
533 Measurex
534 Molins
535 SKF AB
536 Sinclair
537 Wimpey

1

CODE LIST 3 : SIC

0000 Unknown
0010 Agriculture
0011 Farming and Stock Rearing
0012 Agricultural Contracting
0013 Market Gardening
0020 Forestry
0030 Fishing
0031 Forestry
1000 Ore Extraction and Refining
1010 Coal Mining
1020 Stone Quarrying and Mining
1030 Chalk Clay Sand and Gravel
1040 Petroleum & Natural Gas Extraction
1046 Oil Company
1090 Other Mining and Quarrying
1091 Iron Ore Mining and Quarrying
1092 Other Metal Ore Mining
1093 Salt Mines, etc
1094 Other Non-metal Mining and Quarrying
2110 Grain Milling
2120 Bread and Flour Confectionary
2130 Biscuits
2140 Bacon, Meat and Fish
2141 Quick Freezing Meat and Fish
2142 Other Meat and Fish Processing
2150 Milk and Milk Products
2151 Heat Treatment of Milk
2152 Butter Chese etc
2153 Ice Cream
2160 Sugar
2170 Cocoa Chocolate and Sugar Confect.
2171 Chocolate and Cocoa
2172 Sugar Confectionary
2180 Fruit and Vegetable Products
2181 Jam Marmalade Jellies etc
2182 Quick Freezing Fruit and Vegetables
2183 Other Fruit and Vegetable Products
2190 Animal and Poultry Foods
2210 Natural Oils and Fats
2290 Other Foods
2291 Margarine

2292 Starch and Misc Foods
2310 Brewing and Malting
2320 Soft Drinks
2390 Other Drinks
2391 Distilling
2392 Wine Cider and Perry
2400 Tobacco
2610 Coke Ovens and Manuf. Fuel
2620 Mineral Oil Refining
2630 Lub. Oils and Greases
2700 Chemicals
2710 General Chemicals
2711 Inorganic Chemicals
2712 Organic Chemicals
2713 Formulated Chemicals
2720 Pharmaceuticals
2730 Toilet Preparations
2740 Paint
2750 Soap & Detergents
2760 Synthetics
2761 Synthetic Resins and Plastics
2762 Synthetic Rubber
2770 Dyestuffs
2780 Fertilizers
2790 Other Chemicals
2791 Polishes
2792 Adhesives
2793 Explosives and Fireworks
2794 Pesticides, Herbicides
2795 Printing Inks
2796 Surgical Bandages etc
2797 Photographic Chemicals
3110 Iron & Steel
3111 Wrought Iron
3112 Steel Making and Casting
3120 Steel Tubes
3130 Iron Castings
3210 Aluminium and Alloys
3220 Copper and Alloys
3230 Other Non-ferrous Metals
3300 Mechanical Engineering
3310 Agricultural Machinery
3320 Machine Tools
3321 Metal Cutting Machine Tools
3322 Metal Forming Machine Tools
3323 Welding and Flame Cutting Equip.
3330 Pumps, Valves, and Compressors
3331 Pumps
3332 Valves
3333 Compressors
3334 Hydraulic and Pneumatic Equip.
3340 Industrial Engines
3341 Internal Combustion Engines
3342 Other Prime Movers
3350 Textile Machinery
3360 Construction Machinery
3370 Mechanical Handling
3371 Conveyors
3372 Cranes
3373 Lifts and Escalators
3374 Winches and Hoists
3375 Industrial Trucks
3380 Business Equipment
3390 Machinery
3391 Mining Machinery
3392 Printing Machinery

3393 Refrigerating Machinery
3394 Heating & Ventilating Machinery
3395 Weighing Machinery
3396 Portable Power Tools
3397 Food Processing Machinery
3398 Packaging Machinery
3399 Other Machinery
3410 Industrial Plant & Steelwork
3411 Boilers and Plant
3412 Industrial Process Plant
3414 Constructional Steelwork
3415 Non-structural Steelwork
3420 Ordnance and Small Arms
3490 Other Mechanical Engineering
3491 Ball Bearings
3492 Precision Chain
3493 Other Mechanical Engineering
3510 Photographic and Copying
3520 Watches and Clocks
3530 Surgical Instruments and Appliances
3531 Surgical Instruments and Appliances
3532 Spectacles etc
3540 Sci. and Indl. Inst. and Systems
3541 Optical Instruments
3542 Other Instruments and Systems
3600 Electrical Engineering
3610 Electrical Machinery
3611 Electrical Generating Machinery
3612 Switch and Control Gear
3613 Motors and Other Elec. Machinery
3620 Wires & Cables
3630 Telecomms. Equipment
3640 Electronic Components
3641 Valves and Transistors
3642 Integrated Circuits
3643 Other Components
3650 Broadcasting Equipment
3651 Records and Tapes
3652 Radios TVs HiFis etc
3660 Electronic Computers
3661 Computer Software
3670 Electrical Capital Goods
3671 Security and Signalling Systems
3672 Radiocomms. Nav aids Other Equip.
3680 Domestic Electrical Appliances
3690 Other Electrical Goods
3691 Vehicle and Aircraft Equip.
3692 Electric Batteries
3694 Electric Lamps
3695 Electric Lighting
3700 Shipbuilding and Offshore Engg.
3701 Shipbuilding and Offshore Engg.
3702 Marine Engines
3800 Tractors
3810 Motor Vehicles
3820 Motor Cycles
3830 Aerospace
3831 Aircraft Airframes and Missiles
3832 Aero Engines
3833 Hovercraft
3834 Aircraft Components
3840 Railway Locos & Tracks
3850 Railway Carriages & Wagons
3910 Hand Tools
3920 Cutlery
3930 Nuts Bolts Screws

3940 Wire Goods
3950 Cans Metal Boxes
3960 Jewellery
3990 Misc Metalwares
3991 Metal Furniture
3992 Metal Windows and Doors
3993 Locks
3994 Springs
3995 Drop Forgings
3996 Domestic Holloware
3997 Industrial Holloware
3998 Metal Small-ware
3999 Domestic Gas Appliances
4110 Man-made Fibres
4120 Cotton Spinning and Doubling
4130 Weaving
4140 Woolen and Worsted
4141 Wool Sorting
4142 Worsted Spinning
4143 Worsted Weaving
4144 Wool Recovery
4145 Woollen Spinning and Weaving
4146 Pressed Felt
4150 Jute
4160 Rope, Twine & Net
4170 Hosiery and other Knitted Goods
4180 Lace
4190 Carpets
4210 Narrow Fabrics
4211 Elastics
4212 Woven Machinery Belting
4213 Other Narrow Fabrics
4220 Made-up Textiles
4221 Household Goods
4222 Canvas Goods
4230 Textile Finishing
4290 Other Textile Industries
4291 Asbestos
4292 Other
4310 Leather & Fellmongery
4311 Leather
4312 Fellmongery
4320 Leather Goods
4330 Fur
4400 Clothing
4410 Weatherproof Outerwear
4420 Male Tailoring
4430 female tailoring
4440 Menswear
4441 Overalls Jeans
4442 Shirts Underwear
4450 Womenswear
4460 Hats and Millinery
4490 Other Dresswear
4491 Corsets and Swimwear
4492 Gloves, etc
4493 Umbrellas and Walking Sticks
4494 Other
4500 Boot & Shoe
4600 Building Materials
4610 Bricks and Refractory Materials
4611 Refractory Goods
4612 Bricks Tiles Fireclay
4620 Pottery
4621 Porcelain Electrical Wear
4622 Glazed Earthen Wear

4623 Other China etc
4630 Glass
4631 Glass
4632 Glass Containers
4640 Cement
4690 Building and Abrasive Materials
4691 Abrasive Materials
4692 Building Materials
4710 Timber
4711 Sawmilling
4712 Building Woodwork
4720 Furniture and Upholstery
4730 Bedding
4740 Shop and Office Fittings
4750 Wooden Containers and Baskets
4790 Misc. Wood Manufs
4791 Cork
4792 Wooden Heels and Lasts
4793 Other Wood Manufs
4810 Paper & Board
4820 Paper and Board Packaging
4821 Cardboard Boxes
4822 Paper Packaging
4830 Manufactured Stationary
4840 Other Paper and Board Manufs
4841 Wallpaper
4842 Other
4850 Printing Publishing Newspapers
4860 Printing Publishing Periodicals
4890 Other Printing and Publishing
4910 Rubber
4911 Tyres and Tubes
4912 Other Rubber Goods
4920 Floor Coverings
4930 Brushes and Brooms
4940 Toys etc
4941 Toys and Games
4942 Childrens Carriages
4943 Sports Equipment
4950 Misc. Stationary
4960 Plastics Products
4990 Misc Manufs.
4991 Musical Instruments
4992 Other
5000 Construction
6010 Gas
6020 Electricity Production
6030 Water Supply
7010 Railway Transport
7020 Road Passenger Transport
7021 Bus Transport
7022 Taxi Transport
7030 Road Haulage Transport
7050 Sea Transport
7060 Port Facilities
7070 Air Transport
7080 Postal Services
7090 Misc Transport Services
7091 Travel Agents etc
7092 Storage
7093 Other
8100 Food Wholesale Distribution
8101 Groceries
8102 Other Food
8110 non-Food Wholesale Distribution
8120 Other Wholesale Distribution

8121 Tobacco
8122 Clothing Footwear and Textiles
8123 Paper Stationary and Books
8124 Other Non-food Goods
8125 General Wholesale Merchants
8200 Food Retailing
8201 Groceries and Provisions
8202 Other Food
8210 non-Food Retailing
8211 Confectionary Tobacco Newspapers
8212 Clothing and Footwear
8213 Household Goods
8214 Other non-food Goods
8215 General Stores
8310 Coal Oil Builders Materials etc
8320 Other Materials
8600 Insurance
8610 Banking
8620 Other Financial Institutions
8630 Property Owning
8640 Advertising and Market Research
8650 Other Business Services
8660 Central Offices not elsewhere allocable
8710 Accountancy Services
8720 Education Services
8721 Primary and Secondary
8723 Further Education
8724 Educational Admin.
8725 Other Educational
8740 Health Services
8741 Hospitals
8742 Local Authority Clinics
8743 General Practitioners
8744 Health Service
8745 Other Medical Services
8760 R&D Services
8790 Other Professional Services
8791 Architects
8792 Other Scientific and Tech Services
8793 Prof and Scientific Organisations
8794 Veterinary Sugeons
8795 Other
8810 Cinemas Theatres etc
8811 Cinemas
8812 TV Services etc
8820 Sport & Other Recreation
8830 Betting and Gambling
8840 Hotels etc
8850 Restaurants Cafes
8860 Public Houses
8870 Clubs
8880 Catering Contractors
8890 Hairdressing and Manicure
8910 Private Domestic Services
8920 Laundries
8930 Dry Cleaning
8940 Garages, Motor Repairs
8950 Repair of Boots and Shoes
8990 Other Services
8991 Funerals
8992 Photography
8993 Welfare and Charitable
8994 Community Services nes
8995 International Agencies
8996 Trade Associations
8997 Other

9010 National Government
9011 Defence
9013 Royal Air Force
9015 Royal Navy
9016 Government Administration
9060 Local Government
9061 Police
9062 Fire Service
9063 Other
9500 Mass Consumer Market

1

CODE LIST 4 : TECHNICAL CLASS

0 Unknown
1 Tractors
4 Tractor Implements
5 Combine Harvesters
6 Balers
7 Foragers
8 Muck Spreaders
9 Fertil. Distributers
10 Cultivators
11 Mowers
12 Seed Drills
13 Grain Driers
14 Vegetable Planters
15 Milking Equipment
16 Spraying Equipment
17 Feeding Equipment
18 Agriculture
21 Aboriculture
23 Fishing
24 Coal Face Machinery
25 Mine Roof Supports
26 Mine Winding Machy
27 Coal Handling Machy
28 Coal Processing Machy
30 Mine Railway Machy
31 Coal Mining
34 Other Coal Machy
38 Frozen Foods
39 Foodstuffs
40 Food Ingredients
41 Synthetic Feeds
42 Enzymes
43 Food Machinery
44 Food Processing
45 Dairying
46 Sugar Refining
47 Brewing
48 Tobacco Making
49 Food Packaging
50 Inorganic Processes
51 Organic Processes
52 General Chemicals
54 Propranolols
55 Anti-rheumatics
56 Anti-asthmatics
57 Penicillins
58 Cephalasporin
59 Tetracyclines
60 Diuretics
61 Valiums
62 Oral Contraceptives
63 Other Drugs
64 Unknown Drugs
65 Drug Delivery Methods

66 Drug Making Equipment
67 Paints
68 Paint Application
69 Detergents
70 Detergent Components
71 Detergent Making
72 General Polymers
73 Polymer Sandwiches
74 Synthetic Fibres
75 Non-woven Fabrics
76 Resins, etc
77 Rubbers
78 Dyes and Pigments
79 Dye Making/Dyeing
80 Fertilizers
81 Adhesives
82 Explosives
83 Pesticides/Rodenticides
84 Herbicides/Fungicides
85 Printing Inks
86 Dressings
87 Blast Furnaces
89 Steelmaking
90 Steel Melting/Degassing
91 Steel Casting
92 Steel Rolling
96 Steels
97 Steel Tubes/Cans
98 Aluminium Refining
99 Aluminium Casting
100 Aluminium Heat Treatment
103 Aluminium Alloys
106 Copper
107 Titanium
108 Other Metals
109 Forging
110 Sintering
112 Metal Coating
113 Superplastic Forming
114 Eng. Modelling/Testing
115 Eng. Measuring/Copying
116 Gears
117 Bearings
118 Mech. Couplings
119 Grateings
120 Shearing/Bending
121 Turning
122 Milling
123 Boring/Drilling
124 Grinding
125 Other Machining
126 Mech. Work Transfer
127 Mach. Automation
128 Mach. DBH
129 Mach. NC
130 Mach. DRO
131 Mach. CNC
132 Tooling and Cutting
133 Electrochemical Mach.
134 Spark Erosion
135 Fluid Jet Mach.
138 Electron Beam Mach.
139 Arc Welding
140 Friction Welding
141 Exothermic Welding/Casting
142 Electroslog Welding/Casting

143 Other Welding
144 Soldering/Brazing
145 Metal Cutting
147 Metal Abrasion
148 Metal Pressing
149 Metal Extrusion
150 Metal Forming
151 Hand Power Tools
152 Hand Garden Tools
153 Valves
154 Pumps
155 Piping
156 Filters
157 Flowmeters
159 Hydraulic Pumps
160 Hydraulic Systems
161 Compressors
162 Leak Repairing
163 Misc Fluid Eng.
164 Vacuum Systems
165 Diesel Engines
166 Gas Turbine Engines
170 Refrig Compressers
171 Cryogenics
173 Refrigeration
174 Fans
175 Ventilation
176 Driers
177 Air Conditioning
178 Air Heaters
179 Domestic Gas Appl.
180 Domestic CH
181 Solar Heating
182 HEVAC Controls
183 Boilers
184 Furnaces
185 Kilns
186 Other Process Heaters
187 Burners
188 Ignition
190 Nuclear Fuel
191 Nuclear Power
192 Other Process Plant
193 Office Electronics
195 Office Equipment
197 Vending Machines
198 Packaging Machinery
199 Photographic Materials
200 Photo. Equipment
201 Cinema
202 Photo. Engineering
203 Copying Systems
204 Duplicating
205 Optics
206 Optical Fibres
207 Lasers
208 Laser Instrumentation
209 Holography
210 Magnets
211 Superconductivity
212 Nucleonic Sources
213 Nucleonic Instrumentation
214 Communication Instruments
215 Electronics Instruments
216 Plotters
217 Counters

218 Other Lab Electronics
219 X Ray Equipment
220 Microscopy
221 Spectroscopy
222 Other Sci Instruments
223 Centrifuges
224 Textile Inst
225 Colour Measurement
226 Skidding Measurement
227 Temperature Measurement
228 Weighing
229 Moisture Measurement
230 Viscosity Measurement
231 Methane Detection
232 Aaemometers
233 Contents Measurement
234 pH Measurement
235 Instrument Engineering
236 Steam Turbines
237 Heat Exchangers
238 Generators
239 Transformers
240 Switchgear
241 Rectifiers
242 Electric Motors
243 Motor Control
245 Power Cables
246 Telephone Cables
247 Other Cables
248 Telecomms
249 Semiconductor crystals
250 Semiconductor processing
251 Semiconductor diode devices
252 Other discrete semiconductor devices
254 Integrated circuits
258 Thin and thick film circuits
259 Electronic valves and tubes
260 Surface acoustic wave devices
261 Fibre Optic equipment
262 Ultrasonic devices
263 Liquid crystal displays
264 Passive electronic components
265 Printed circuits
266 Electronic circuit assembly
267 Elecronic IR imaging
268 TV studio equipment
269 Broadcasting
270 TV sets
273 Record playing equipment
274 Loudspeakers
275 Tape recording equipment
276 HiFi equipment
277 Computers - general hardware
278 Computers - component hardware
279 Computers - peripherals
282 Computerised control systems
283 Computer systems
284 Software
285 Radiocommunication
286 Radar equipment
287 Navigation equipment
288 Electronic security equipment
289 Electronic traffic control
290 Other electronic equipment
291 Domestic Electrical
292 Batteries

293 Lighting
294 Petroleum Products
295 Oil Refining
296 Offshore Oil Prodn.
297 Petroleum Expl.
298 Gas Processing
299 Offshore Platforms
303 Foundations
304 Underwater Pipelines
305 Diving
306 Submersibles
307 Underwater Equipment
309 Shipping
310 Submarines
311 Hovercraft
312 Containers
317 Marine Equipment
318 Road Vehicles
320 Petrol Engines
321 Transmission
322 Suspension
323 Brakes
324 Tyres
329 Pedal Cycles
330 Motor Cycles
336 Aircraft
337 Turbine Blades
338 Jet Engines
342 Demisting/Deicing
344 Aircraft Controls
345 Aircraft Simulators
347 Airspeed Instruments
348 Military Avionics
349 Military Electronics
350 Missiles
351 Satellites
353 Locomotives
354 Signalling
355 Rail Goods
356 Tracks
357 Overhead Electric
358 Rope
359 Leather
360 Tanning/Dyeing
361 Sole/Heel Making
362 Last Making
363 Shoes
364 Shoe Making
365 Leather Belts
366 Clothing
367 Bricks
368 Refractories
369 Pottery Making
370 Cement Making
371 Cement
372 Fibre Cement
373 Concrete
374 Glassmaking
375 Glass
376 Glassware
378 Ceramics
379 Gypsum
380 Insulation
381 Misc Materials
382 Timber
383 Timber Machinery

385 Furniture
386 Office Furniture
387 Paper
388 Paper Presses
389 Stationary
390 Paper Forming
391 Post Press Equipment
392 Printing Machinery
393 Typesetting
394 Publishing
395 GRP
396 Other Composites
397 Plastics Processing
398 General Plasticware
399 Domestic Plasticware
400 Paper Coating/Cutting
401 Plastic Packaging
402 Industrial Plastics
403 Mineral Processing
404 Roadmaking
405 Excavators/Loaders
406 Dumpers/Trucks
407 Construction Equipment
408 Tunnelling
409 Pipelaying
410 Setting Out
411 Timberwork
412 Buildings
413 Bridges
414 Steelwork
415 Cranes
416 Winches/Jacks
417 Lifts
418 Handling Vehicles
419 Mechanical Handling
420 Pneumatic Handling
421 Waste Handling
422 Fastenings
426 Gas Supply
427 Electricity Supply
428 Joint Replacement
429 Other Implants
430 External Aids
431 Sterilisation
432 ECG Monitors
433 CAT Scanners
434 Medical Instruments
435 Medical Equipment
436 Construction Planning
437 Business Management
438 Production Planning
439 Planning
440 Environment
441 Electronic Pig
442 Other Instruments
443 Rubber Products
444 Electronic Control
445 Machinery
446 Anaesthetics
447 Dental Care
448 Defence
449 Road Transport
450 Carpets
451 Natural Fibres
452 Yarns
455 Propellers

456 CAD
458 Catering
459 Business
460 Local Government
461 Airfields
462 Helicopters
463 Textiles
464 Textile Machinery
465 Robots
466 Locks
467 Cutlery
468 Jewellery
469 Pulping
470 Organisation
471 Health
472 Mech. Engineering
473 Electronics Eng.
474 Scientific Services
475 Rail Transport
476 Air Transport
477 Building Services
478 Telephone Exchanges
479 Telephone Transmission
480 Telephones
481 Postal Services
482 Clocks/Watches
483 Dynamometers
484 Vehicle Instruments

1

CODE LIST 5 : UNIT_REGION

00 ?? Unknown
01 EA East Anglia
02 SW South West
03 SE South East
04 N North
05 EM East Midlands
06 YH Yorks and Humbs
07 WM West Midlands
08 NW North West
09 SC Scotland
10 WA Wales
11 NI Ulster

1

CODE LIST 6 : LAND

00 ?? Unknown
01 GE FR Germany
02 OE Austria
03 BE Belgium
04 CA Canada
05 DE Denmark
06 SP Spain
07 US United States
08 FR France
09 GR Greece
10 IR Ireland
11 IC Iceland
12 IT Italy
13 LU Luxembourg
14 NO Norway
15 NE Netherlands
16 PO Portugal
17 UK United Kingdom
18 SE Sweden
19 CH Switzerland
20 TK Turkey
21 JA Japan

22 FI Finland
23 AU Australia
24 NZ New Zealand
25 YU Yugoslavia
26 SU USSR
27 AL Albania
28 BU Bulgaria
29 CZ Czechoslovakia
30 HU Hungary
31 PO Poland
32 RU Rumania
33 HK Hong Kong
34 EG E Germany

1

CODE LIST 7 : INT_SRCE

0 ?? Unknown
1 RE Research
2 DV Development
3 DS Design
4 PE Prod'n Eng.
5 OP Operations
6 OT Other
7 IH In_house
8 NO None

1

CODE LIST 8 : EXT_SRCE

0 ?? Unknown
1 NA NA
2 UP Univ/Poly
3 GD Gov-Defence
4 GC Gov-Civil
5 RA RA
6 RI Rel. Indy
7 UI Unrel. Indy
8 IN Individ.
9 PC Parent Co.
10 AB Abroad
11 LI Licenced
12 UK UK Company
13 FC Foreign Co.
14 GU Gov,Univ,RA
15 OT Other
16 NO None

1

CODE LIST 9 : STATUS

0 ?? Unknown
1 IN Independent
2 SD Subsidiary/Div
3 PC Public Corp
4 OT Other

1

CODE LIST 10 : TYPE

0 ?? Unknown
1 ES Equipment System
2 CP Combined Product
3 PD Single Product
4 PR Single Process
5 SP Several Processes
6 MA Material
7 OT Other

1

CODE LIST 11 : EXPERT

1 A.R. HEALEY, PATENTS AND TECHNICAL INFORMATION OFFICER, PIRELLI
GENERAL
2 K. KNIGHT, MAINTAINENCE ENGINEER, HARLECH TV
3 A. WATERHOUSE, CHIEF ENGINEER, NEI: HORSELEY BRIDGE

4 B. BLUNDON, DIRECTOR - PRINTING AND INFORMATION TECHNOLOGY, PIRA
5 SATCHWELL
6 SUDDARDS, BBPCL/TGD
7 BICC
8 HODSON SMITH, BA DYNAMICS, HATFIELD
9 RUSSELL, ENGINEERING MANAGER - PROPULSION, DOWTY ROTOL
10 J. PEEL, MANAGER, BELOIT CORP
11 HOSELITZ
12 PEARCE FERRANTI COMPUTERS
13 IBM
14 HEUGHAN, FIRA
15 COWIE, BT
16 BANKS, BLACK CLAWSON
17 EDWARDS, STC
18 MARIOT
19 GRAYSON, FC
20 WILLIAMS, SHELL
21 MERLO, BTRL
22 BARROW, UMEL
23 WILLIS, SPOONER

1

CODE LIST 12 : YEAR

0 unknown
1 1945-49
2 1950-54
3 1955-59
4 1960-64
5 1965-69
6 1970-74
7 1975-79
8 1980-84

1

CODE LIST 13 : EMP_RANGE

0 unknown
1 1-199
2 200-499
3 500-999
4 1000-9999
5 10000-29999
6 30000-99999
7 100000-

1

END



SCIENCE POLICY RESEARCH UNIT

University of Sussex

Mantell Building
Falmer Brighton
East Sussex BN1 9RF
UK

Tel (0273) 686758

Dear

The Science Policy Research Unit is now completing a survey of significant innovation in British industry and commerce since the second world war. The survey has involved the preparation of lists of innovations by persons who are expert in different product groups, and the identification of the innovating firm

We are now seeking to verify and extend our information by writing to the innovating firms. We would be grateful, therefore, if you would complete the enclosed forms as appropriate. Full acknowledgement to firms who have contributed will be made in the publications resulting from our study. If you would like to receive a summary of our final report, please indicate in your reply.

Kindly note that under 'total employment', 'firm' refers to the department, division, company or other unit responsible for the innovation, 'parent (GB)' refers to the total GB employment of the largest ownership group of which the innovating unit forms a part, and 'parent (world)' refers to the world employment of that group.

I would like to take this opportunity to thank you for your invaluable help with this investigation. If you have any problems or queries connected with the investigation, please do not hesitate to contact either Mr M Robson, or Mr J Townsend at the Science Policy Research Unit.

Yours sincerely

Professor C Freeman

List of Innovations Explanatory Notes

a) GENERAL

For our purposes, an innovation is defined as the first successful commercial introduction of a significant new product, process, material or system into British manufacturing industry or services.

The list should cover all the above types of technical or social innovation, and should not exclude innovations which do not have a technical component (e.g. purely organisational changes).

Please include innovations in specialised machinery, instruments etc which are used in the sector together with innovations you know of which have arisen in this sector and are used by other sectors.

The rate of technical and social innovation varies over time and across sectors, so no attempt has been made to specify a 'target' number of innovations in each sector. Please do not feel obliged to fill in all the sheets we have sent to you, but on the other hand do not hesitate to add more innovations if you feel they merit inclusion. Further sheets can be sent to you on request

b) PARTICULAR QUESTIONS

A) Description of innovation. Please make the description as precise and comprehensive as is necessary for proper identification of the innovation.

B) Type of innovation. Please enter the category (given at the top of each page) which best fits the innovation. The category should be assigned from the viewpoint of the innovating firm, e.g. if a firm introduces machinery which it first uses itself in the course of producing one of its own products, then that is a process innovation, however, if the firm makes machinery for other firms, the new machine is a product.

C) UK innovating firm If the firm in question is a division or subsidiary of a parent company, please give the name of the division or subsidiary in addition to the name of the parent. If you are not sure whether the firm was in fact the innovator or just the first user of the innovation, put a question mark after the firm's name

D) Year of introduction. This is the date of the first commercial introduction of the innovation into British industry, and not the date of invention, prototype testing or introduction abroad. If you are unsure of the exact date, please give the approximate year and enclose it in brackets

E, F) Foreign innovating firm. (if applicable) If the innovation was first introduced elsewhere in the world, please give the name of the foreign firm. As with the UK firm, please put a question mark after the firm's name if you are not certain that this firm was the world innovator.



Codes for innovation type

1 Equipment system 2 Combined product 3 Single product 4 Single process
5 Several processes 6 Material 7 Something else (What?)

No. 3392/3840

No

A Description of innovation		
B Type of innovation (see above)	C Name of UK innovating firm	
D Year of introduction to UK	E Was UK firm first in the world?	F If not, name of foreign innovating firm

No

A Description of innovation		
B Type of innovation (see above)	C Name of UK innovating firm	
D Year of introduction to UK	E Was UK firm first in the world?	F If not, name of foreign innovating firm

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Yours sincerely

Professor C Freeman

MULTICHOICE QUESTIONS

Please fill in on the form provided for each innovation a letter for one of the answers given for each question

- 1 Was the status of your firm at the time of the innovation
 - (a) independent firm
 - (b) separate trading company but wholly owned subsidiary
 - (c) autonomous division
 - (d) public corporation
 - (e) other (please specify)
- 2 From the point of view of your firm was the innovation
 - (a) an equipment system
 - (b) a combined product
 - (c) a single product
 - (d) a single process
 - (e) several processes
 - (f) a material
 - (g) other (please specify)
- 3 Was the principal input of knowhow to the innovation from within the firm
 - (a) research
 - (b) experimental development
 - (c) design
 - (d) production engineering
 - (e) the operating staff
 - (f) other (please specify)
- 4 Was the principal external input of knowhow to the innovation
 - (a) from a UK company
 - (b) from a foreign company
 - (c) from a govt lab, university, research association, etc
 - (d) other (please specify)
 - (e) there was no significant external input
- 5 Did the innovation find application in
 - (a) a single industry
 - (b) several industries
 - (c) many industries
- 6 Did the innovation establish
 - (a) a modified product or process
 - (b) a new product or process
 - (c) a new series of products or processes
 - (d) a new branch of industry
- 7 Did the innovation achieve
 - (a) an existing (or very similar) function
 - (b) a new function
 - (c) a new range of functions
- 8 Did the innovation lead to
 - (a) one or no patents
 - (b) several patents
 - (c) a new class or family of patents
- 9 Did the innovation lead to
 - (a) little or no published reference
 - (b) paragraphs in books/journals
 - (c) new textbooks or chapters



Name of Company _____

Description of Innovation _____

Please complete and correct the following information

Were you responsible for this innovation? If not who was?										
Were you solely responsible? If not who else was involved?										
What were its principal advantages over previous products/processes?										
What were the principal innovatory features of the innovation?										
Year of UK Introduction			World Introduction was UK first in world? — if not give name of innovating firm							
Total UK Employment at time of innovation of			(a) firm* (b) parent (GB)* (c) parent (world)*				3 digit SIC of innovation (where known)			
Principal activity of innovating firm at time of innovation							— 3 digit SIC (where known)			
Was the innovation first used by your own firm?										
— If first used elsewhere please provide these details where known			Principal activity of first user				— 3 digit SIC			
			Name of first user							
Multichoice questions (see separate sheet) — please put appropriate letter			1	2	3	4	5	6	7	8

* see accompanying letter for definitions of firm and parent (GB), (world).

Please use this space and overleaf to specify any 'other' answers you give to the Multichoice questions and to provide any comments you wish to make



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Dear

Thank you for the most valuable assistance you have given us in our survey of significant technical innovations in British industry and commerce since the second world war. We have now virtually completed collecting data and we wish to ensure that our coverage is as comprehensive and representative as possible. We are asking you to review and return to us the enclosed list of innovations which we have subdivided into several groups.

Could you indicate what you think has been the significance of each innovation, according to the four fold division we give on the print out. "Radical new developments" are those which embody highly original ideas and which provide the basis for a great advance in technology in several industries, eg the gas turbine jet engine, the transistor, the digital computer. "Significant new developments" are also original, and make a substantial contribution to technical progress in at least one industry, eg basic oxygen steelmaking, Harrier vertical take-off jet aircraft, numerical control for machine tools. We are aiming to include all radical and significant new developments in our survey and therefore we would be grateful if you could provide details of any of these that do not appear on the list.

"New developments" are fairly obvious in concept, but require some technical problems to be solved and hence they make a contribution to one technical field of an industry, eg electronic pig for surveying oil and gas pipelines, paraquat weedkiller, structural foam plastics. We are not aiming for complete coverage of innovations of this significance, but we expect to have a useful sample from those suggested to us by our experts. Products and processes which are only "an improvement (or possibly a copy) of an existing development" make a minimal contribution to technical progress - although their economic importance may be considerable - and it is our intention to delete entries which you indicate to be in this category from our survey.

Finally, we would ask you to check, and if necessary correct, the information we have for each entry on the printout, and if you can, to answer any specific queries we have pencilled in. We thank you once again for your help. Do please contact *me* if you have any queries.

Yours sincerely