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Delivery List for the Ferranti Poseidon, Hermes, Apollo and Argus computers.

Background.

The **Poseidon, Hermes** and **Apollo** computers were products of the part of Ferranti based in Lily Hill, Bracknell, Berkshire concerned with the real-time application of computers. Apollo was for on-line Air Traffic Control work. Poseidon, and later Hermes, were developed for real-time data processing, mainly in defence applications for the Royal Navy. Initially premises were shared with Ferranti Computer Department staff working on Orion, etc. The Ferranti Computer Department merged with ICL in 1963, but the real-time activities continued under the Ferranti name as Digital Systems Department (later Division), moving to Western Road, Bracknell in 1963.

Each computer type used the latest technology available at the time: transistors and then various levels of integrated circuits. Later development was of the F1600 (and FM1600) ranges of computers of much greater operation speed but of much reduced physical size. Each of the F1600 range had the same basic instruction set as the Hermes computers to ensure software compatibility, although later versions implemented extra functions such as floating point arithmetic, etc.

The prime installation for Poseidon was of three interconnected Poseidons on the aircraft carrier HMS Eagle – (see also below). Little sales data on Hermes has yet come to hand. Only one Apollo computer appears to have been produced. This was delivered to Oceanic Air Traffic Control Centre, Prestwick in 1961, remaining in service until 1982. Poseidon and Hermes were followed by the Ferranti F1600 series of computers from the mid 1960s onwards, with the primary application being ship-board installations for command and control. An airborne version was also produced.

The original **Argus** machines were fixed-program computers developed by Ferranti, Wythenshawe, solely for use in the Ground Station (Launch Control Post) for the Bloodhound Mk2 surface-to-air missile system. Bloodhounds were in service from 1958 onwards. The UK's last Bloodhound missile squadron was stood down in July 1991.

From about 1961 onwards, the Argus design was made general-purpose and was successively modified and enhanced for use in a variety of industrial process control applications. The Argus 100 was the smallest and cheapest of the range, which extended upwards to the Argus model 500 and above. A high degree of software compatibility was maintained. Ferranti retained the Wythenshawe operation after the merger of the Computer Department with ICL. The Argus series proved to be a sound basis for a wide range of real-time applications. The several different versions in the series reflected improvements in technology but all retained a high degree of software compatibility.

The Argus 100 to Argus 500 delivery list is given on the next pages, after Poseidon.

Deliveries of Ferranti Poseidon computer and related machines.

Source. The following information on deliveries of Ferranti computers for naval applications comes from files ADM 1/28513 and CVA-01 at The National Archive, with thanks to Lt Cdr Peter Marland RN Retd.

Poseidon: total of eleven computers, as follows:

(a) HMS Eagle (re-commissioned May 64): three computers.
(b) Four Batch 2 Destroyers (two computers per vessel, starting with HMS Fife, commissioned June 66).
(c) Another system was fitted ashore at Portsdown for software development.

Hermes: few details of installations have come to light, though one of the first was delivered to the National Physical Laboratory, Teddington, in 1964 where it was used for the on-line control of experimental distillation column flows. However, from the mid-1960s the functionality of Hermes within the Royal Navy's on-board *Command and Control* systems seems to have been gradually taken over by the Ferranti F1600 and FM1600 series of computers. The picture in the mid-1960s seems to have been as follows.

F1600 and FM1600 series: total of at least 52 computers delivered for naval applications:

(a) Three prototype F1607 computers delivered in 1965 to ASWE, Aberporth and Woomera, to be used for software development and trials of linked systems.
(b) A pair of FM1607 fitted to HMS Bristol some time after mid-1968.
(d) Various FM1600 series computers subsequently fitted to fourteen Type 42 (Sheffield) class destroyers, three CVS class carriers (HMS Invincible), and retro-fitted to eight Ikara Leander frigates. There were two FM1600s for each ship, but only one each in the Ikara Leander frigates. The shore development facilities were at Portsdown.
(e) There were also a number of part systems (totalling at least three FM1600 at HMS Collingwood (a shore establishment) for maintainer training, and two at the shore development facility at Portsdown). There is also mention of a F1616 prototype with 8 displays, for the shore development building at Portsdown, due for delivery in mid 1966.

Deliveries of Ferranti Argus computers, up to September 1972.

Source.
This data has been transcribed from the report *Argus Computer Installations,* produced by Ferranti Ltd., Automation Systems Division, Wythenshawe and dated 15th September 1972. The document is catalogued as A1996.10/6/3/15 at the Museum of Science and Industry (MOSI), located in Manchester. MOSI has made the data available and has kindly agreed to this summary being produced. Serious researchers should always go back to the original document, especially since A1996.10/6/3/15 has pencilled annotations and other information that has not been transcribed here.

As with most manufacturer's documents written several years after deliveries started, the source data is liable to contain inaccuracies and should ideally be cross-checked by referring to the official history of each end-user site.

Date	***Model***	***Customer***	***Application***
?? **1962**	200	Imperial Chemical Industries Ltd., Fleetwood. (See **note (a)** at the end of the Table)	Control of ammonia soda plant?
Apr 1**963**	200	Central Electricity Generating Board, West Thurrock.	Control of 200 MW boiler/turbine
?? 1963	200	Central Electricity Research Lab.	See **note (b)** at end of Table
Aug	100	Manchester Univ. Jodrell Bank Radio Telescope	Control of Mk II radio telescope & data logging
Feb **1964**	100	British Steel Corp., Rotherham	Furnace control
May	100	Verein Deutscher Eisenhuttenleute, W Germany	Control of universal slabbing mill
May	100	Societe Intercommunicale Belge d'Electricite, Charlerio, Belgium	Boiler performance logging & efficiency calcs.
Sept	100	Imperial Chemical Industries, Agricultural Division, Billingham-on-Tees	Mobile process control for fertiliser plant
Feb **1965**	200	Central Electricity Generating Board, Bristol (see **note (b)** at the end of the Table)	Control of grid network involving 31 turbine generators
Feb	300	Medical Research Council, Mol. Biol. Lab., Univ. PG Med. School, Cambridge	Control of X-ray diffractometers
March	100	Loughborough Coll. Of Tech., Chemistry Dept.	Study of process dynamics
June	200	Imperial Chemical Industries, Winnington (see **note (a)**at the end of the Table)	Control of ammonia soda plant
June	100	Imperial Chemical Industries, Mond Div., Widnes	Control of plant producing Paraquat herbicide
Sept	100	Imperial Chemical Industries, Mond Div., Buxton	Control of cement plant
Nov	100	Imperial Chemical Industries, Petrochem. Div., Teesside	Control of Olefine distillation plant
Jan **1966**	100	British Steel Corp., Redbourne Works, Scunthorpe	Control of soaking pits
Jan	300	Manchester University Institute of Science & Technology	Studies in computer control of large scale chemical plant
Feb	300	British Steel Corp., Workington	Advisory control of acid Bessimer steel making process
March	100	Imperial Chemical Industries, Petrochem. Div., Wilton, Teesside	Control of nylon chemicals plant
March	300	Redifon Ltd., Crawley	Flight training simulator for VC10
May	100	Rheinische Kalcsteinwerke Gmbh, 5603 Wulfrath, W. Germany	Quality control of limestone
July	300	Redifon Ltd., Crawley	Flight training simulator for DC9
Nov	400	Imperial Chemical industries Ltd., Central Instrument research Labs., Reading	Control of process control experiments
Jan **1967**	100	British Steel Corp., The Ickles, Rotherham	Mill pacing investigations on a hot strip mill.
Feb	400	Manchester Univ. Jodrell Bank Radio Telescope	Control of experiments
March	400	UK Atomic Energy Authority, AERE, Harwell	Sonic spark tests
April	400	Atomic Weapons Research Est., Aldermaston	Nuclear pulse height analysis
May	300	Imperial Chemical Industries Ltd., Mond Div.,	Data acquisition & control of Mass

		Runcorn. (See **note (c)** below).	Spectrometer & lab. instruments
June	400	Hilger Electronics (Scotland) Ltd., Dalkeith	X-ray crystallography
June	400	Royal Aircraft Establishment	Aircraft navigation experiments (airborne)
July	400	UK Atomic Energy Authority, Winfrith Heath	Nuclear pulse height analysis
Mar **1968**	400	Bradford Inst. of technology, Bradford	Control of model chemical plant
March	400	University of Lancaster, Bailrigg	Nuclear physics experimentation
March	400	Wiggins Teape Ltd., Dartford	Control of paper mill
Apr	500	*Undisclosed*	Supervisory control of synthetic rubber plant
Apr	400	Ferranti Ltd., Edinburgh	Engineering drawing automation
May	500	Verein Deutscher Eisenhuttenleute, Dusseldorf, W. Germany	Research on control of hot rolling mills
May	400	Cunard Steamship Co., Liverpool	Instrument logging & alarm monitoring
May	500	Kodak Ltd., North Harrow	Control of film coating process
June	500	British Steel Corp., East Moors Works, Cardiff	Billet mill production control
June	400	UK Atomic Energy Authority, Capenhurst	Control of production plant
June	500	BP Chemicals (UK) Ltd., Grangemouth	Butadiene extraction plant
June	400	Hilger Electronics (Scotland) Ltd., Dalkeith	X-ray diffractometer
June	400	International Computers Ltd., Australia	Service machine
July	500	Kalle AG, Wiesbaden-Biebrich, W Germany	Control of polyester foil making plant
Aug	400	Deute Versuchsanstalt fur Luft unbd Raumfahrt, Bad Godesberg, W Germany	Space rsearch
Aug	500	British Aircraft Corporation, Stevenage	Check-out equipment
Aug	500	Medical Research Council, Oxford	X-ray diffractometer control protein molecular structures
Aug	400	Bonn University, W Germany	Control and data acquisition of Stockert radio telescope
Sept	500	Esso Petroleum Co Ltd., Research Station, Abingdon	Engine test bed control
Sept	500	Esso Petroleum Co Ltd., Milford Haven refinery	Supervisory control of refinery
Sept	500	British Steel Corp., Scunthorpe	Section mill saw lines control
Sept	500	UK Atomic Energy Authority, Winfrith Heath	Nuclear pulse height analysis
Oct	500	Atomic Weapons Research Est., Aldermaston	Nuclear pulse height analysis
Oct	400	Rutherford College of technology, Newcastle-on-Tyne	Process control
Oct	400	Associated Pulp & Paper Manufacturers, Australia Pulp & Paper Mills Ltd., Tasmania	Control of paper mill
Nov	400	British European Airways (BEA)	Cargo handling
Nov	400	British European Airways (BEA)	Cargo handling
Nov	400	British European Airways (BEA)	Cargo handling
Nov	400	Royal Aircraft Establishment	Aircraft navigation experiments (airborne)
Nov	500	Central Electricity Generating Board, National Grid Control Centre	Power distribution control
Dec	500	British Non-Ferrous Metal Research Association, London	Mobile process control lab.
Dec	400 L	Imperial Chemical Industries, Pangbourne	Research
Jan **1969**	500	British Steel Corp., Strip Div., Port Talbot	Mobile process control lab.
Jan	400 L	Manchester U. Jodrell Bank Radio Telescope	Control of Mk II radio telescope
Jan	500	Deutches Elektronen Synchrotron, Notkestieg, Hamburg	Control of synchrotron
Feb	500	University of Liverpool	Mass spectrometer
March	500 L	INORGA, Czechoslivakia	Steel work simulation
March	500 L	Central Electricity Generating Board, Bankside	Spares holding
March	500	Dept. of Trade & Industry, Warren Springs Lab., Stevenage	Chemical plant control and investigation

March	500	Rijksuniversiteit Utrecht, Holland	Mass spectrometer
March	500	Radio & Space Research Association, Ditton Park, Slough	Radio & space research
March	500	*Undisclosed*	Process control
March	400 B	*Undisclosed*	Machine tool control
March	400 B	*Undisclosed*	Machine tool control
March	400 D	*Undisclosed*	Machine tool control
April	400 B	*Undisclosed*	Machine tool control
May	500	British Steel Corp., Port Talbot	Blast furnace control
May	500	British Steel Corp., Cybor House, Sheffield	Control investigation
May	500	Central Electricity Generating Board, National Grid Control Centre	Power distribution control
May	500 L	Sprecher & Schuh, Aarau, Switzerland	Power station monitoring
May	500	Tunnel Cement Ltd., Croydon	Control of cement plant
May	500	B W B Boelkow, Eckenfurde, W Germany	Digital simulator
May	400 B	*Undisclosed*	Machine tool control
May	400 B	*Undisclosed*	Machine tool control
June	500	Imperial Chemical Industries Ltd., Mond Div., Runcorn. (See **note (c)** below).	Data acquisition & control of Mass Spectrometer & lab. instruments
June	500	Farbenfabrik Bayer, Leverkusen, W Germany	Control of photographic paper production
June	400 L	Rheinische Kalcsteinwerke Gmbh, 5603 Wulfrath, W. Germany	Satellite to existing system
June	500	Post Office Research, London	Research
June	400 B	*Undisclosed*	Machine tool control
June	400 B	*Undisclosed*	Machine tool control
July	400	Institut fur Flugnavigation, Stuttgart, W Germany	Air research
July	400	J Lucas & Co., Birmingham	Production control
July	400	Stock Exchange, London	Central stock payment
Aug	400	Simchem Ltd., Cheadle Heath	Control of polyester polymer production
Aug	400 B	*Undisclosed*	Machine tool control
Aug	400 B	*Undisclosed*	Machine tool control
Sept	400	National Coal Board, Scottish Division	Control of mining complex at Longannet, Fife
Sept	500	British Overseas Airways Corp.	Cargo warehouse
Sept	500	British Overseas Airways Corp.	Cargo warehouse
Sept	400	Link Miles Ltd., Lancing	Simulator
Oct	400	British Steel Corp., Orb Works, Newport	Rolling mill
Nov	500	CERN, Geneva	Control of intersecting storage rings
Nov	500	CERN, Geneva	Control of intersecting storage rings
Nov	500	Bonn University, W Germany	100M telescope control
Nov	500	Dept. of Civil Aviation, Australia	Message switching
Nov	500	Dept. of Civil Aviation, Australia	Message switching
Nov	400	Stock Exchange, London	Central stock payment
Dec	500	City University, London	Research
Dec	500 L	Sprecher & Schuh, Aarau, Switzerland	Service machine
Jan **1970**	400	Salford University	Research
Feb	400 A	Royal Aircraft Establishment, Farnborough	Airborne experiments
Feb	400	Dover Harbour Board	Traffic control for ship loading
Feb	400	Royal Aircraft Establishment	Aircraft navigation experiments
Feb	500	International Publishing	Photo composition of newspapers and periodicals
March	500	*Undisclosed*	Hot strip mill control
March	500	Imperial Chemical Industries, Kilroot	Terylene plant control
March	500	British Titan Products, Billingham	Supervisory control & alarm analysis
March	500	CERN, Geneva	Interactive displays
April	400	UK Atomic Energy Authority, Chapel Cross,	Data reduction

		Scotland	
April	400	UK Atomic Energy Authority, Chapel Cross, Scotland	Data reduction
May	500	Central Electricity Generating Board, Dungeness B nuclear power station	Turbine run-up alarms
May	500	Kodak Ltd., Harrow	Control of film production
June	500	Imperial Chemical Industries, CIRL/Mond Division, Runcorn	Control computer development
June	500	ICI Holland NV, Rozebburg	Polyester polymer plant control
June	500	Imperial Chemical Industries, Mond Division, Widnes	Chemical plant control
June	400	London Stock Exchange	Price display system
June	500	Solartron, for Australian Navy	Simulators
July	500	ICL for Mashpriborintorg, USSR	Electrical equipment test control
July	500	ICL for Mashpriborintorg, USSR	Electrical equipment test control
July	500 L	Argus Computer Systemen Nederland V O F, Amsterdam	Service and spares
Aug	500	Esso Petroleum Ltd., Fawley refinery	Direct digital control of aromatics
Aug	500	Esso Petroleum Ltd., Fawley refinery	Direct digital control of aromatics
Aug	500	Dept of Civil Aviation, Australia	Message switching
Aug	400	*Undisclosed*	Automatic control system
Aug	500	Solartron, for Australian Navy	Simulators
Aug	400	*Undisclosed*	Automatic control system
Sept	500	Kodak Ltd., North Harrow	Control of film coating process
Oct	500 L	Gas Council	Extensions
Oct	500	*Undisclosed*	Enhancement of existing plant
Oct	500	Dept of Civil Aviation, Australia	Message switching
Oct	500	Dept of Civil Aviation, Australia	Message switching
Oct	500	International Publishing Co.	Computer assisted typesetting
Oct	500	International Publishing Co	Computer assisted typesetting
Oct	500	Solartron, for Australian Navy	Simulators
Oct	500	Birmingham Police	Information and control system
Nov	500	Tunnel Cement Ltd., Croydon	Cement plant control
Nov	300	Simon Carves, Cheadle Heath (for Karaganda)	Control of rubber production in Russia
Nov	300	Simon Carves, Cheadle Heath (for Karaganda)	
Dec	500	*Undisclosed*	Chemical plant control & investigation
Dec	500 L	*Undisclosed*	Fault analysis
Dec	500	Henry Simons for United Biscuits (McVitie & Price, Harlesden)	Sequence control and logging on biscuit plant
Jan **1971**	500	Solartron, for Australian Navy	Simulators
Jan	500	Bertschinger & Rohr Brimegg., Switzerland	Crane control for automatic warehouse
Jan	600	Bertschinger & Rohr Brimegg., Switzerland	Crane control for automatic warehouse
Jan	600	Bertschinger & Rohr Brimegg., Switzerland	Crane control for automatic warehouse
Jan	600	Bertschinger & Rohr Brimegg., Switzerland	Crane control for automatic warehouse
Jan	600	Bertschinger & Rohr Brimegg., Switzerland	Crane control for automatic warehouse
Feb	500	*Undisclosed*	Direct digital control of refinery
Feb	500	Laporte Industries, Grimsby	Data acquisition or control
March	500	Caltex Ltd., South Africa	Refinery control
March	500	British Steel Corp., Appleby Frodingham, Scunthorpe	Plate mill control
March	500	Central Electricity Generating Board, Dungeness B nuclear power station	Turbine run up alarms

March	500	Dept. of Civil Aviation, Australia	Message switching
March	500	Dept. of Civil Aviation, Australia	Message switching
March	400	*Undisclosed*	Automated control system
March		Post Office, Goonhilly	Data acquisition & system monitoring
April	500	*Undisclosed*	Data acquisition from Mass Spectrometer
April	500	Imperial Chemical Industries, ICI Dyestuff, Huddersfield	Supervisory control
May	500	Hoare & Co	Information dissemination
June	500	Central Electricity Generating Board, Dungeness B nuclear power station	Line spare system
June	500	BP Chemicals, Baglan Bay	Data gathering & management information
June	500	BP Chemicals, Baglan Bay	Data gathering & management information
June	500	BP Chemicals, Baglan Bay	Data gathering & management information
June	500	BP Chemicals, Baglan Bay	Data gathering & management information
June	500	Kalle Wiesbaden Biebrich	Control of foil manufacture
June	500	Kalle Wiesbaden Biebrich	Control of foil manufacture
June	500 L	Sprecher & Schuh	Spares holding
July	500	UK Atomic Energy Authority, Dounreay, Scotland	Control of nuclear power
July	500	UK Atomic Energy Authority, Dounreay, Scotland	Control of nuclear power
July	500	Gas Council	Pipeline supervision
July	500	Gas Council	Pipeline supervision
July	500 L	British Overseas Airways Corp.	Cargo warehouse
July	500	Meschersmitt Bolkow, W Germany	Satellite check out
Sept	500	Central Electricity Generating Board, Dungeness B nuclear power station	Turbine run up alarms
Sept	300	Simon Carves Ltd. (Balakowsky)	Control of rubber processing for tyre factory in Russia
Oct	500	Post Office, Leicester	Computer aided maintenance
Dec	400	Malaysia-Singapore Airlines	Seat reservation
Dec	500	Meschersmitt Bolkow, W Germany	Satellite check out
Feb **1972**	400	Central Electricity Generating Board, Hartlepool	Switchyard monitoring
Feb	400	Malaysia-Singapore Airlines	Seat reservation
Feb	400	Malaysia-Singapore Airlines	Seat reservation
March	500	ISCOR, South Africa	Blast furnace data logging
March	400	Malaysia-Singapore Airlines	Seat reservation
March	400	Malaysia-Singapore Airlines	Seat reservation
May	500	*Undisclosed*	Computer aided research
July	500	Central Electricity Generating Board, Hartlepool	Power station control
July	500	Central Electricity Generating Board, Hartlepool	Power station control
July	500 L	*Undisclosed*	Program preparation
Aug	500	British Steel Corp., Scunthorpe	Control oxygen steel making
Aug	500	*Undisclosed*	Warehousing control

Notes on the above Table.

(a). The Argus 200 that was first installed some time in 1962 at ICI's Fleetwood, Lancashire, establishment was moved to the larger ICI site at Winnington, Northwich, Cheshire in June 1965.

(b). The Argus 200 that was first installed some time in 1963 at the CERL was moved to CEGB Bristol in February 1965.

(c). The Argus 500 installed at Runcorn in June 1969 replaced an Argus 300 installed in May 1967.

The following installations were marked as *On Order* as at 15th September 1972.

Model	***Customer***	***Application***
500	British Steel Corp., Llanwern	Blast furnace control
500	British Steel Corp., Llanwern	Blast furnace control
500	British Steel Corp., Llanwern	Oxygen steel-making control
500	British Steel Corp., Llanwern	Oxygen steel-making control
500	British Steel Corp., Llanwern	Sinter plant control
500	Central Electricity Generating Board, Heysham	Nuclear power station control
500	Central Electricity Generating Board, Heysham	Nuclear power station control
500	Central Electricity Generating Board, Heysham	Nuclear power station control
500	Indivision Doel, Doel, Belgium	Nuclear power station monitoring
500	Oy Nokia, Finland	Data logging, nuclear power station
500	Oy Nokia, Finland	Data logging, nuclear power station
500 E	*Undisclosed*	Warehouse control
?	Simon Carves (for Czechoslovakia)	Rubber blending
?	Simon Carves (for Czechoslovakia)	Rubber blending
500	*Undisclosed*	Data collection
500	*Undisclosed*	Data collection
500	E. D. E. D., Australian Navy	Simulator
500	E. D. E. D., Australian Navy	Simulator
500	E. D. E. D., Australian Navy	Simulator
500	Melbourne & Metropolitan Water Board	Sewage treatment plant
500	*Undisclosed*	Blood processing
500	British American Tobacco	Mass Spectrometer analysis
500	*Undisclosed*	Integrated network system