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MS INSTRUMENTS PLC

MS Instruments Plc (MSI) is a high technology company whose major activities are in design and manufacture of Ballistics Instrumentation and Live-Fire Training as well as specialised systems. In this specialist field the company is one of the major suppliers in the world.
The company supplies Automatic Training Systems to the Army and Police Forces as well as Air and Sea Forces.

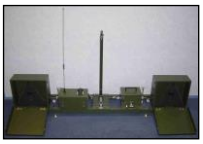
Live Fire Training Systems

The MS Instruments PLC Portable Automatic Marking System (PAMS) is a training and zeroing system that can be used in the field with live fire. For each position, there is a pop-up target and an Automatic Marking System (AMS) also known as LOMAH (Location Of Miss And Hit). Both units are co-located on a compact framework.
Where standard Operational Requirements define the performance that should be achieved in the Annual Personal Weapons Test on the training range, the PAMS is used to develop the necessary skills in realistic environments.
The unit below is shown with the target at an angle of 45°. The angle can be set from the Range Processor and is used to simulate targets at varying distances. In addition, the PAMS may be engaged from a wide range of angles with the accuracy maintained throughout.

Ballistic Instrumentation

Our Acoustic Target type 530 was selected to instrument NATO Weapons Trials, as was our Projectile Velocity Measuring System. Well over 1500 Velocity Measuring Systems have been produced to date.

Our range of precision electronic targets provide developers, manufacturers and trials and testing organisations with a cost-effective means of checking the performance of weapons and ammunition by measuring the co-ordinates of shots passing through the target area. Shot positions are instantaneously displayed on a graphical representation of the target area together with coordinate data and a running total of shots fired. A permanent record can be stored on disk or printed for subsequent analysis. Calibres from 4mm up to 150mm can be accommodated giving the capability of measuring the performance of the full range of weapons from small arms to tank guns provided the projectile is travelling in excess of Mach 1.3 at the target for acoustic targets and below that with optical targets.



All of the measuring equipment produced by the Company has an integral microprocessor. This enables the units to communicate digitally by cable, radio or other telemetry link to the Range Processor.

The MSI Ballistic Control Software is developed in-house for the control of all sensor systems produced by the Company.
Each system has its own associated control Tab on which the unit's setup parameters can be configured. Data received from the unit is displayed on the tab along with all statistical analysis. Printouts may be obtained and calibration functions applied.

The Type 858 Optical detector is used to generate an output pulse when a projectile passes immediately overhead. It can be used in conjunction with other units such as the 817 to provide a Projectile Velocity Measuring System. Such a system can, to within an accuracy of 0.1%, record velocities from as low as 10 metres per second to in excess of 5000 metres per second. Under normal conditions, the projectile would be detected at a height of up to 500 times the projectile calibre.

The Flight Follower system is designed for fault finding on very expensive munitions providing developers and manufacturers as well as trials and testing organisations with a cost-effective means of checking theperformance of weapons and ammunition.

The information in this document is correct at the stated time. MS Instruments PLC has a policy of continuing development and reserves the right to make design changes/improvements to the products

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Automatic Target / Velocity / EPVAT

All of the standard Product Range has been developed under Private Venture and as Design Authority the Company maintains logistic support and an after sales service.
MSI have designed and supplied special instrumentation for Light Gas-gun requirements in UK Government research facilities. The instrumentation comprises hypervelocity velocity measuring equipment, including X-ray detectors, special trigger units and advanced Image Measurement equipment for damage assessment studies.
MSI has also been responsible for a number of large and successful 'turn key' projects in the ballistic field. In the UK, Royal Ordnance, has been using a complete weapons testing facility for over 20 years that was specially designed for them. MS Instruments PLC also supplied the quality control software for this project. Similar systems have been supplied to Eley Ltd., and to various Qinetiq establishments.

Overseas, complete weapons testing facilities have been supplied to The Austrian Government; FFV Sweden; Dutch MoD; Egyptian Government; Singapore MoD; Indian MoD; and Malaysian MoD and many other Governments Worldwide.
Training systems have been supplied to the UK Armed Forces, Police and Royal Air Force as well as the following countries: The Malaysian Army, Qatar Armed Forces, Saudi Armed Forces and Police, Singapore and Indonesian Air Forces, Dutch Army and German Army.
(The above facilities and systems have also been supplied to other government and private institutions worldwide.)

Our designs have been supplied to a number of systems integration companies worldwide, including HPI (formerly AVL), DRS Data Systems, Hadland Photonics and Spescom.

The Company have designed and manufactured special airborne computers for hostile fire detection. The Hostile Fire Indicator was fitted to Army Air Corps helicopters for service in Northern Ireland. The equipment detected hostile fire and provided the pilot with an alarm and direction information. This equipment has also been sold to a number of overseas Air Forces for use in UN peacekeeping operations.

MSI also designed and supplied Night Vision Systems that use a novel automatically ejecting bracket, designed as a private venture. Over 800 systems have been supplied to the RAF. The Night Vision System was used in the Gulf War in early 1991 by RAF Tornado Aircrew and was instrumental in allowing the widely-reported high accuracy low-level attacks to be carried out.

MSI design and manufacture Rugged IBM-compatible computers that are used for Range Instrumentation. The high-integrity scientific software that is used on these computers is also written and supplied by MSI.

NIMBUS Covert Protection System – Non-Lethal Deterrent

In response to the ever increasing threat to troops and security forces, MSI have developed a turn-key Covert protection solution, designed specifically to protect the driver and passengers of a vehicle or convoy of vehicles in the event of an insurgent attack or kidnapping attempt. MSI have designed special performance smoke and flash/bang grenades in a system which is effective, cheap and has no side effects. It is hidden underneath the vehicle and the grenades are fired via a control panel placed inside the cabin. Retrofitting to existing vehicles takes around three hours.

The Non-Lethal Deterrent System in action

Firing Box

Smoke Units in action during a static deployment

In October 2000, the Company acquired Wiltshire Ballistic Services. This is a dedicated ballistic test facility and indoor trials and demonstration range located in a modern 200m tunnel in Devizes, Wiltshire. Further information can be found via the web-site at http://www.wiltshireballistics.co.uk.

2002 saw the opening of Wiltshire Shooting Centre (The Shooters' Shop), providing a 25 yd indoor airgun range and shooters' shop supplying new and second hand rifles & accessories, reloading equipment, consumables, scopes and binoculars.

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