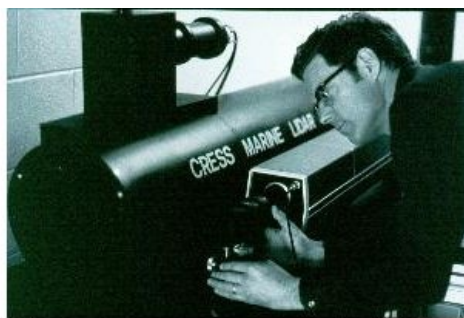


# OPTECH INCORPORATED

## Bring to Light the Unknown



Optech Incorporated, based in Vaughan (Toronto), Canada, virtually brought Light Detection and Ranging (Lidar) to the survey world. Starting as a small R&D enterprise over 35 years ago, Optech has grown into a leading international developer, manufacturer and supporter of advanced Lidar and imaging-based survey instruments. The company attributes its success to commitment to quality, innovation and customisation.



< Allan Carswell receives the Ontario Global Traders Provincial Award

Optech is a privately owned company, established in 1974 by Allan Carswell. The company grew from Professor

Carswell's groundbreaking work in the Physics Department at York University (Canada) where he was developing methods for applying Lidar technology for atmospheric studies and as a means to measure atmospheric pollution. A major utility contracted Dr Carswell to track emissions from a large coal-burning electricity generating plant and, since the university was not permitted to produce equipment for industry, he formed Optech in response to this request. After the success of this first project, Optech hired additional staff and expanded its work to include laser rangefinders, as well as the then unknown field of using lasers to measure water depth.

At first Optech consisted of just two principals, Allan and his wife Helen. During the first year Dr Carswell hired two individuals who became indispensable to the rapid growth and success of the fledgling company.

Sebastian Sizgoric and Doug Houston were crucial in "growing the company", and both went on to become company vice presidents whose contribution and loyalty speak volumes for the kind of unique, collegial and driven company that Optech is today.

### Moving Ahead

Optech's official Mission Statement is 'To provide state-of-the-art, cost-effective, electro-optics-based measurement solutions in aerospace, remote-sensing, industrial and government sectors'. The company works closely with academic, government, military and space-based organisations to meet their specialised application requirements. From this heritage of innovation, clients have come to depend on Optech to provide industry leadership in new technologies, and capabilities for maximising their data collection accuracy and efficiency.

The company's management style and philosophy are reflected in its Guiding Principles, several of which bear repeating: 'The quality of our products and services is our top priority'. 'Continuous innovation and improvement are essential to our success' and 'We seek to develop collaborative partnerships to expand and strengthen our business'.

From its humble beginnings in North York (Toronto), Optech now has offices and production facilities in the US (Mississippi and New York) and in Belgium. Over 280 people are employed, representing a mix of physicists, engineers and software developers; technologists and technical specialists, managers, sales, marketing and support personnel, and administrative support.

Though it is a relatively small company serving specialised vertical markets, Optech has shown consistent growth, enjoying sales revenues in the range of USD50 million per annum on average in recent years.

## Far Horizons

Specialised Optech products fall into four broad application areas: 1) airborne survey products (terrain mappers and marine bathymetry systems); 2) industrial and 3D imaging (Lynx Mobile Mapper, ILRIS tripod-mounted 3D imager); 3) metric digital cameras) and 4) space (lunar and planetary orbiting and docking vision systems). While these cover environments from beneath the earth to the land, sea, sky and beyond, all Optech Lidars are based on laser time-of-flight (TOF) ranging and measurement technology.

Optech customers literally span the globe, with systems at work under and on every land, in the sea and in the air. Optech instruments have even reached the surface of Mars; the Meteorological Lidar Sensor that landed on the Martian surface in 2008 was crucial in helping to discover water in the form of snowfall.

The company has enjoyed an especially strong surge in growth over the past year, acquiring two digital aerial camera manufacturing companies. According to company president Don Carswell, photogrammetric imagery and [Lidar data](#) collection technologies continue to merge into a single mainstream technology. The recent acquisitions align with a focus on extending customer-oriented products and support.

Along with this expansion have come new models added to the Optech ALTM line. The ALTM Pegasus is designed specifically for high-definition mapping applications requiring high-density point sampling. The first multi-channel airborne laser terrain mapper, Pegasus incorporates a wide field-of-view (FOV) with sample rates to 500kHz. The ALTM Aquarius is a customised system developed for the University of Houston (US), combining the ALTM Gemini high-altitude, continuous multi-pulse terrain mapping laser with bathymetric (water depth-measuring) laser similar to Optech's SHOALS hydrography system.

Another recent introduction is the Lynx Mobile Mapper M1, featuring measurement rates of 1 million samples per second while maintaining range and accuracy. Lynx has already been used on many mobile platforms, from the conventional (cars, vans and trucks) to the unusual, such as barges, jet-boats, rail- and off-road vehicles.

## Beyond Recovery

This year and beyond will be interesting for Optech. During the past three years the global economic downturn has negatively impacted markets worldwide, with Optech and the survey sector suffering in accordance with events. Although much of the survey service sector recovered during 2010, it is in the current year that Optech has seen growth return to pre-recession levels. Optech is anticipating that 2011 will be a record year that sees the survey equipment market return to full capacity.

This has also been a year of change for Optech in its business organisation. Just this past March, Teledyne DALSA, a subsidiary of Teledyne Technologies Incorporated, acquired a minority interest in Optech's parent company. Teledyne Technologies is a provider of sophisticated instrumentation, digital imaging products and software, aerospace and defence electronics, and engineered systems, and Carswell is pleased to have it as a strategic investor in the company. From the currently used Teledyne DALSA's CCD sensors to its presence in the imaging, environmental and marine markets, it is seen as a potential contributor to Optech and growth and profitability.

Recent years have seen Lidar technology evolve from an aid in the generation of orthophotos to becoming a complete survey deliverable. Resolution per square metre has increased to the point where Lidar itself can be considered an imaging technology, and new techniques based on image processing can be used to more easily solve complex survey demands. The combination of active (Lidar) and passive (camera) digital imaging technologies enables better quality surveys to be performed at ever lower cost.

As Optech moves closer toward the complete integration of digital camera imagery with 3D georeferenced Lidar, we see continued growth in most areas of the world for both survey services and equipment. Our cost-effective new multi-sensor systems and workflows, combined with the backlog of demand from the recession years, means that both Optech and its clients can look forward to a successful 2011 and beyond.