

Keeping Light Years Ahead

Pick to Light

Pick to Light technology (and its derivatives Put to Light and Pack to Light) has been in existence for 25 years and is part of the technology arsenal available to organisations seeking to reduce the 40%-60% of warehouse picking costs, speed warehouse throughput and minimise errors.

The Simplest Picking Technology

Pick-to-Light is a computer controlled Light directed system, and, conceptually and operationally, is one of the simplest picking methodologies available. Each item stock location is marked by a four digit LED screen which displays the number of items to be picked. The LED display is accompanied by two buttons, one is used by the operator to confirm the pick has been successful, whilst the other is used to signal a discrepancy e.g. in the event there is insufficient stock. Optional displays may also be displayed to describe the product.

Often Used in Conjunction with Conventional Bar Code Technology

Pick to Light has been effectively used in fast moving packing operations dealing with similar and relatively high value items, usually in conjunction with a conveyor system that transports order totes from product zone to zone, each tote representing a different order, that is identified by accompanying bar code technology which routes the totes to the appropriate product picking zone. Pick to Light can also be utilised as an effective picking system with static rack and stack systems.

Costs are falling

Once the province of high volume, large operations, the costs, due to its adaptation by windows based WMS systems, has fallen. The good news is that it is now affordable for most mid sized operations. It can be used across market sectors that demand fast, paperless picking; next day delivery operations for example.

Further it is relatively easy to retrofit existing racking or shelves with a Pick to Light system, and the cost of the retrofit is often cheaper than installing a RF Directed system from scratch, particularly for larger implementations.

So what could be simpler?

Yes it's entirely paperless. Yes it is suited to multilingual operators. Yes it is claimed to be one of the fastest picking system available as it eliminates the serial computerised intermediate instruction. Yes it is ideal for operations employing seasonal workers, as training time is minimal and operators don't have to be equipped with RF scanners, making it even more cost effective.

Error rates of less than 0.1% can be expected as the system eradicates mistakes caused by picking from the wrong bin, or misinterpreting the picking instructions. Efficiency increases can be expected as both hands are free to fulfil order totes, with no filling in of paperwork required.

Considerations

Like all picking systems it does not suit all warehouse processes. Like other picking technologies, scenarios' planning requires careful process and cost benefit analysis before recommendations are made. Pick to Light systems are initially 40%-80% more expensive to purchase compared with, say, Voice systems.

Cost comparisons can be misleading as the ROI and rate of cost reduction will differ depending on the nature of the operation. The technology chosen should provide the best fit for the warehouse operation depending on the required throughput, nature of the product (size and value etc), value, order frequency and the specific business requirements.

Specialist Implementation

Pick to Light certainly requires a specialist to effectively design the system in order to maximise productivity in each zone when work is too light, and avoid bottlenecks when workloads are too high. Particular attention should be paid to accommodate day-to-day and seasonal workload requirements, taking into consideration the expansion of selected zones when new products are introduced.

Zone Workload Balancing

Zone 'balancing' and planning, to avoid multiple orders in a single zone (which can be expensive to implement) is important. With careful analysis and implementation supervisors should have the ability to reconfigure workloads across zones in order to maximise efficiency, re-allocate staff that are under-utilised to areas that require extra help for example.

Avoiding Single Points of Failure

Careful system design is also important, to ensure that single points of failure are eradicated, and avoid failures that affect a whole zone.

Pick to Light systems contain many mechanical lights, and buttons, which should be maintained by local engineers, and a supply of on site spare consumables should always be provided.

The technology is supremely reliable and software fixes, if required, can be accomplished remotely.

Case Study – Hellaby – Project Hobit

Belgravium have refined the Pick to Light System so that it directly interacts with the resource planning and warehouse management systems to streamline the picking process and push up efficiency gains, in some cases, by over 100%.

Pick to Light is ideally suited to support processes that require fast warehouse throughput, increased handling speed and almost 100% picking accuracy of homogenous goods. Typical of this is project Hobit, to give it its Edexcel spelling, which stands for Hellaby Operations Booking-In and Tracking.

On Line Exam-Script Marking System – Processes 150,000 Scripts per Day

The first phase of the Hobit project, an electronic scanning system, was introduced for the 2003 November's exam series. This allowed on-screen marking with Edexcel's innovative ePen system, and cut out the dangers and delay of scripts going by post to and from examiners around the country. Since that time, the volume processed in this manner has steadily increased. **In summer 2005, 2.9 million scripts went to Hellaby to be scanned and marked online by the markers in their home.**

An Automated booking-in system took receipt of nearly three million scripts (that's 30 million sheets of paper) in parcels which identified the paper type and the schools that sent them. A 'traffic light' system extracted the appropriate number of scripts for marking, day by day.

"We receive more than 400,000 scripts in a single key day of exams," says Operations Manager David Hansell. "A lot of temporary staff are used because this is very seasonal work. For the Summer 2005 examination period, we successfully processed up to 150,000 scripts (1.5 Million sheets) a day.

The Pick to Light System – Increased Capability to Process 12.5 Million Scripts per Year

Under the new system, no more than fifteen days after the exam all scripts are fully loaded onto the system for ePen marking. The London team monitor the progress of the markers on the ePen system, so appropriate awarding systems can take names and results to give out to customer schools.

Martin O'Hara, Processing Manager, remarks

"The prime responsibility of the Hellaby site is to provide electronic images of scripts that can be marked by examiners on-line," he says "we've invested in new hardware and software to move the business forward more than four-fold to a projected 12.5 million scripts in 2007. This is further evidence of the company's initiative to improve the examination processthis aligns very strongly with the mission to exploit technology in all we do."

The Pick-to-Light system, provided by Belgravium Ltd, controls the throughput of each subject/paper to ensure the scheduled amount of each subject/paper is processed daily. This is done by the Pick-to-Light system interacting with the attendance register data that is sent to the centers in advance of the examinations being sat. As a result the system knows how many scripts are expected to be in each individual package as it is picked to be processed.

There are mechanised conveyors to transport the scripts throughout the process. Full reconciliation of packs and scripts received is inbuilt, as every pack and individual script has a unique barcode associated with it. The barcodes allow tracking at every phase of the process.

Delivering Speed and Reliability

"During the summer processing, the Hellaby site was running 24 hours a day over three shifts, each one will have just over 100 staff, covering booking-in, sorting, slitting, scanning and editing," says Martin.

A Strategic Platform for Growth

"The investment we made has maintained Edexcel's position as the leading awarding body for modernising the examination process, and ultimately has allowed us to deliver results to students earlier than has previously been possible. Without the Pearson and Belgravium systems it would have been impossible to meet our throughput targets."

Belgravium Technologies Ltd is a world leading specialist innovator and manufacturer of ruggedized wireless driven technologies and scanners for industry. Often used in extreme conditions, Belgravium RFID scanners are manufactured using tooling techniques and components of the highest quality to ensure reliability, long life, and durability to secure accuracy and low lifetime costs for customers.

Proteus Software Ltd has been an established author of warehouse management systems and software for more than 25 years. The software helps control over 5 million sq ft of warehouse space across the UK, Ireland, South Africa, France, Italy, Germany, Russia and the Far East to support the warehousing operations of BP, Danone, Sony, Metro, GlaxoSmithKlein and Whyte and Mackay. To maintain its global customer base Proteus has established centres of excellence in Europe, Asia Pacific, Africa and Eastern Europe.

Belgravium and Proteus jointly have over 50 years experience in the development and implementation of warehouse management solutions and the expertise to help enable customers to make the critical leap that accelerates profitability, creates investment capital and accelerates growth rates beyond that of their competitors.