



Research Paper

Factory stores – manufacturing's necessary evil

Balancing productivity, inventory and management responsibility in UK factory storerooms

know-how makes the difference

ERIKS

Methodology

ERIKS in association with The IET (The Institution of Engineering and Technology) developed an Industry Stock Management Survey. During the period 1st July through to the 1st August 2015, ERIKS undertook research via an internet questionnaire to IET members with over 150 Engineers, Maintenance and Storeroom Personnel across a variety of industrial sectors participating.

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Better understanding by senior management about the importance of good storekeeping on plant reliability has to be stressed.



Foreword

Nobody can deny that UK industry is now amongst the most efficient in the world. A tight focus on cost-down measures has produced lean, competitive industries which are capable of competing, and winning, in globalised markets.

This mentality has filtered down the supply chain, with suppliers at all levels capable of delivering raw materials and components, just-in-time to be fed immediately onto the production line or into a process, reducing stock and working capital to a minimum.

And yet, even in the biggest and best industries, just away from the factory floor there is a room which is cluttered, seemingly badly managed (or not managed at all) and overloaded with inventory.

The storeroom or 'factory stores' is all-too-often a black hole which sucks in stock and inventory, and is seemingly incapable of satisfying the demands of its stakeholders in other parts of the business.

Engineers, who should be on the factory floor fixing machinery, are reduced to leafing through catalogues, trying to find exactly what they need to repair vital equipment.

Procurement are pre-occupied with the often significant monthly expenditure on 'spares and consumables', but do not have the technical knowledge to ask difficult questions or put

into operation an alternative which satisfies the demands of engineering.

In the middle of it all, sits the 'Storeroom Manager' desperately fighting a losing battle and expected, in turn, to manage suppliers, provide technical support, manage inventory, perform stocktakes and serve behind a counter.

This report attempts to answer one simple question: why is there such a contrast between the lean and efficient factory floor and its all-too-often chaotic stores function? Throughout this report you will find verbatim quotes from engineers, maintenance personnel and storeroom managers which attest to the on-going stores management and inventory problems facing UK industry. These, often frustrated, voices demonstrate a desire for factory stores to be more proactive, efficient and aligned with the rest of the organisation.

Our hope is that this report will be thought-provoking, challenging and act as a spur for UK manufacturers to find out what is truly going on in its factory stores, to truly listen to their maintenance teams and take control of one of their last great areas of inefficiency.

Alan Whetstone,
Managing Director, ERIKS UK

Section 1: Storeroom management

Who's in charge here?

The starting point for this research was to identify who has responsibility for factory storerooms. Our thesis was that part of the problem is that no one part of a company has overall operational responsibility for its management or performance on a day-to-day basis.

Our research demonstrated that the storeroom was the sole responsibility for production for 13 per cent of respondents. 24 per cent of respondents declared that maintenance had responsibility, with 14 per cent answering facilities management. Crucially, more than 30 per cent of respondents answered that management of the storeroom was a combination, and was split between production, maintenance and facilities, with 12 per cent declaring that there was no overall operational responsibility for the management of the storeroom.

This means that 42 per cent of storerooms in UK industry are either not managed by any specific division or there is no clear reporting line, which begins to explain why storeroom management and inventory control is so often overlooked. The result of this situation is likely to be a lack of synchronisation between the needs of engineers and the equipment that is available in the stores, which will, in all likelihood, result in engineers not being able to access the parts, spares and equipment they need.



“ My biggest concern is when procurement sign-up group suppliers to give us the best average discount for goods held in a central warehouse. If I need something urgently it may cost hundreds of pounds to get it by taxi or thousands in downtime waiting for a courier. ”

How much stock do you keep in your stores?

The stock issue is a delicate one for factory stores. Too much is a drain on working capital, too little leaves maintenance and operations teams hanging around waiting for stock to arrive – which is a waste of resource and will inevitably have a detrimental effect on production.

We asked our respondents how much stock is kept in their factory stores. The results demonstrate that UK industry is failing to find the balance between stock held in stores and stock that needs to be sourced externally. More than half of respondents answered that their stores kept more than £250,000 of inventory on site, with 27 per cent of respondents declaring that their stores carried less than £50,000 of stock.

The results appear to show either very thin stock levels, which will impact uptime, or overstocking, which has the potential for multiple impacts, not least working capital.

Ideally, we would recommend a 60/40 split, with 60 per cent of all purchases made by stores and 40 per cent by engineers.



“ For all manufacturing businesses, the storeroom should be predicting the requirements of production not reacting to it. I worry that in the UK we are culturally stuck in the past. ”

When did you last complete a stocktake?

Crucial to the smooth operation of a factory store is regular stocktaking, ideally on a monthly basis. Without it, stores will fall prey to multiple issues, from over-stocking through to obsolescence issues. We wanted to find out how often stocktakes are implemented?

The results suggest that industry is inadequately monitoring stock in its stores, with 23 per cent of respondents answering

that stocktakes are conducted annually, with 22 per cent answering that quarterly stocktakes are the norm. Only 16 per cent of those who took part in our survey answered that monthly stocktakes performed.



I want a thrust roller bearing and I want it now!

One of the biggest challenges facing maintenance teams is ensuring that highly qualified engineers are on the factory floor doing their jobs rather than sourcing spares from a catalogue or online.

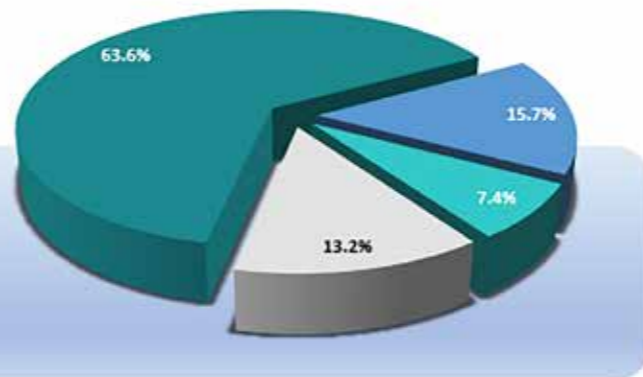
We asked our respondents how much time it takes on average to source or locate equipment in their factory stores. The answers confirmed our worst fears in that 36 per cent those who took part answered that it took more than thirty minutes to find a part in their stores.

This was confirmed when we asked our respondents' opinion on whether the timescales were sufficiently quick, about right or too slow. More than 40 per cent of those who took part in our survey responded that the service being offered to them by factory stores was 'too slow', which would indicate that factory

stores are struggling to keep pace with the demands placed on maintenance teams.

If stores are truly to be seen as the engineer's toolbox, this performance must improve.

Time spent sourcing or locating parts?



How are factory stores being managed?

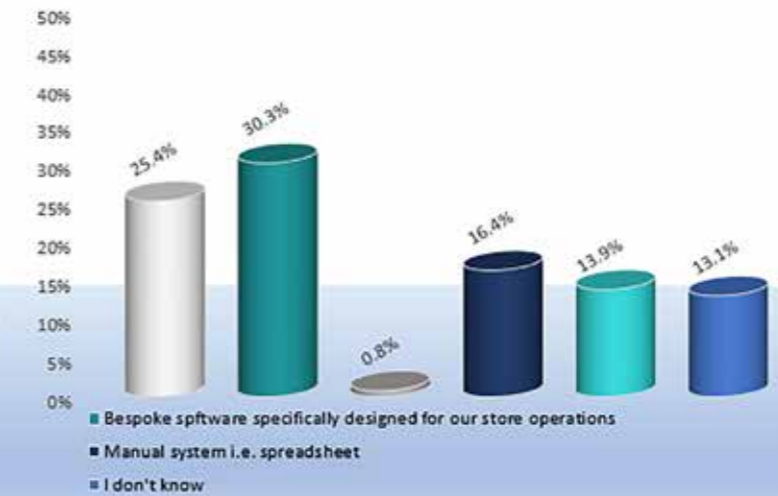
Factory stores can be managed in one of two ways, either in-house or outsourced to an MRO supplier. If stores are being managed in-house, modern IT software can make the job significantly easier. In our survey we asked our respondents what sort of software, if any, is being used to manage stores.

More than 30 per cent responded that their facilities used bespoke software specifically designed for their own stores operations, with more than 25 per cent declaring that they used a maintenance module attached to their company's SOP software. Very few used free software available from the internet.

However, more than 30 per cent of respondents were identified as having no formal storeroom management system or were using a very basic manual system, such as a spreadsheet.

One way of professionalising factory stores management is to use an MRO supplier, but the scope of responsibility given to suppliers can vary markedly from one company to the next. We asked whether our respondents used an MRO supplier and, crucially, what functions they performed. One third replied that there was no use of an MRO supplier in their facility with a further 34.5 per cent of respondents declaring that there was limited use of MRO suppliers and that they were mainly used for fast supply of spares and equipment not held in stock. In total, more than 67 per cent of respondents admitted to limited use of MRO suppliers, which is likely to have a significant impact on engineer 'waiting times' for equipment or parts.

What sort of store management system / software is used to manage your stores?



“ Most businesses have a misguided approach to stock control. In general they try to adopt a 'Just-in-Time' approach without accounting for lead time, scrap and logistics. As a result, the storeroom appears to be a bottleneck with the real issue being masked. ”

Section 2: Day-to-day running

Regular ordering or two of everything?

There are various methods of sourcing parts and spares in industry. We asked what description best described parts and spares ordering in our respondents' facilities?

Interestingly, the answers illustrated a clearly identifiable split. More than half (55.7 per cent), many of whom had previously answered that stock is kept to a minimum sub-£50,000 level in their storerooms, declared that parts were sourced by regular ordering, which reduces stock but eats into engineer time.

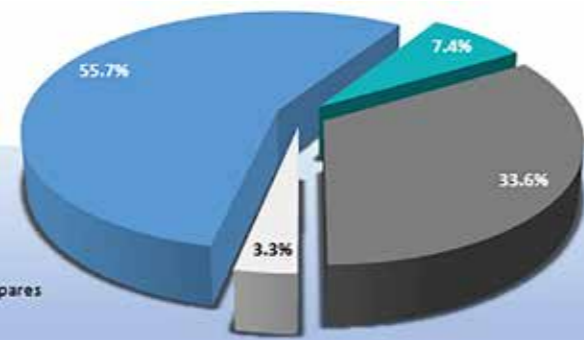
What's more, this approach creates other related problems, not least that engineers are generally disinclined to find the most cost-effective option. Their primary concern, rightly, is getting equipment up and running as quickly as possible.

In contrast, more than 33 per cent of respondents answered that their facility used automatic re-ordering of parts using an inventory management system. Whilst, this can improve parts availability compared to regular ordering, it will inevitably lead to greater levels of stock and, potentially, problems further down the line, such as obsolescence, with stock which is slower moving. A mere seven per cent of respondents answered that only fast-moving items were stocked with MRO suppliers used for all other parts and spares.

The good news, is that the "we always keep at least two of everything" approach to factory stores stocking is dying out. Only three per cent of respondents admitted to using this method.

Which description below describes your approach to storeroom management?

- Regular ordering of parts/spares when required
- Fast moving items with support from MRO supplier for all the other parts/spares
- Automatic re-ordering using an inventory management system
- Always keep at least two of everything



“ I have worked in the same factory as a maintenance engineer for thirty years and today it is all about cost; we stock the parts but at minimum levels. For example, I may need four bearings or proximity switches, but will often find that we only keep a minimum stock of two. ”

Who has responsibility for restocking?

The responsibility for restocking factory stores can fall to any number of areas, from the storeroom manager, through to production, maintenance and procurement. We asked who has day-to-day responsibility for restocking factory stores?

The replies demonstrated that, with 36 per cent, the storeroom manager still has day-to-day control, with production (eight per cent) and maintenance (20 per cent) significantly lower. However, procurement, with more than 26 per cent, is clearly a major factor in day-to-day operations.

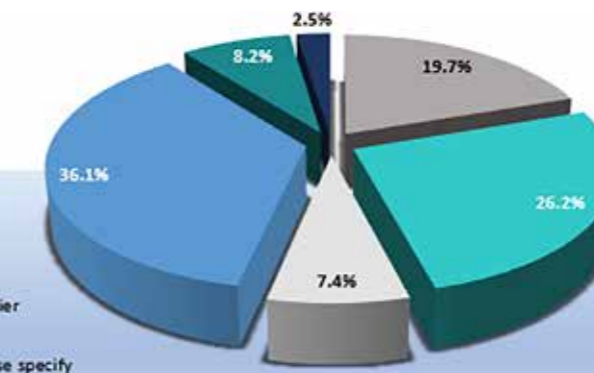
This suggests that, in more than 50 per cent of cases, decisions

on stocking are being made by individuals with limited technical knowledge, namely the store's manager and the procurement department.

We decided to drill a bit deeper and asked who has responsibility for specifying the type of stock to order? With 42 per cent, engineering is clearly in control of parts specifying, with 24 per cent answering in favour of maintenance. However, with 19 per cent and 8.2 per cent respectively, both procurement and storeroom managers clearly wield significant influence on the sourcing process in many cases.

Who has day to day responsibility for restocking the storeroom?

- Storeroom manager
- Production
- MRO supplier
- Maintenance
- Procurement
- Other please specify



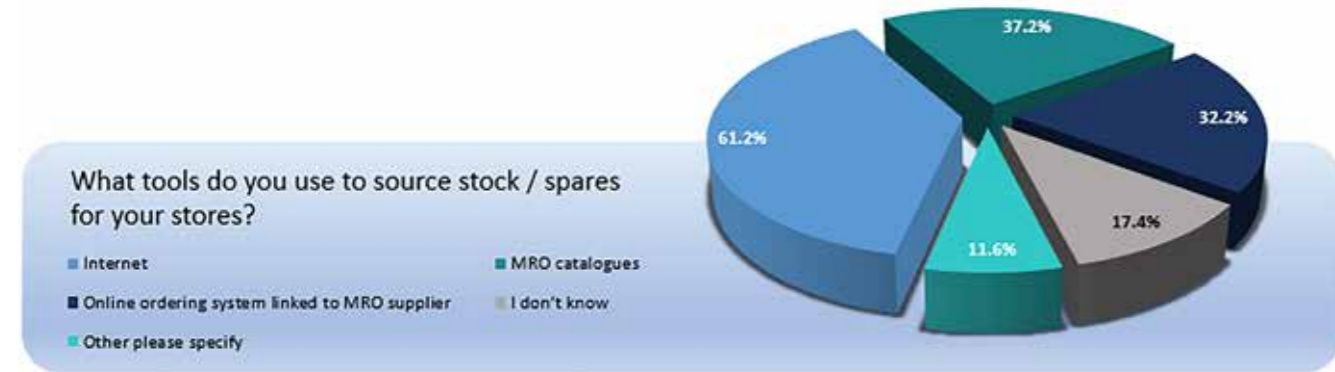
“ We only have one storeman, which was fine until we started to expand. We now order equipment and kit as it is needed for each project, but this means a lot of deliveries coming in which is difficult to track. ”

Online or catalogue?

Parts and spares sourcing can be conducted in a variety of ways, from the traditional MRO catalogue through to sophisticated online ordering systems linked to an MRO supplier. We asked our respondents what tools they used to source stock and spares?

Worryingly, 61 per cent answered that the internet was their primary stock sourcing tool, with more than 37 per cent declaring that hard copy MRO catalogues were still in use in their facilities. Crucially, those who answered that the internet was their primary sourcing tool were not including the use

of an online ordering system linked to an MRO supplier. This will inevitably have a negative impact on the prices paid for parts and equipment, as the 'open market' does not offer the opportunity for supply agreements to be negotiated, which can deliver significant cost savings.



“ Central procurement is a policy which results all-too-often in sub-standard items being purchased. ”

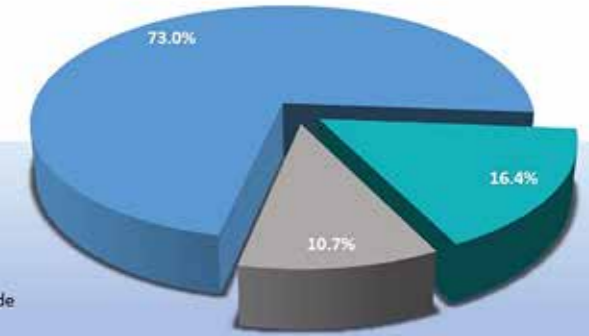
You'll need to get that authorised!

One of the most important ways of ensuring close cost control in factory stores is by restricting what and who can order new parts. We asked our respondents about the type of restrictions placed on ordering in their own facilities. The good news is that restrictions are in place, in fact 73 per cent of those who took part in our survey answered that all orders over a specified cost have to be signed off by a senior manager. Sixteen per cent answered that only certain types of equipment or stock can be ordered dependent upon grade, and only 11 per cent answered that there were no restrictions in place.

However, restrictions are only one method of controlling factory store costs. Our concern was that, under pressure, engineers and store room managers would source the most available part or the one that they find first, regardless of cost. Our

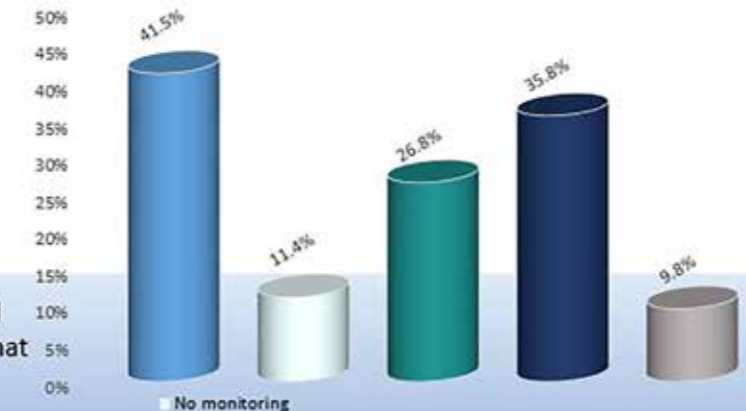
What restrictions are placed on the ordering of new stock or equipment?

- All orders over a specified cost have to be signed off by a senior manager
- Only certain types of equipment and stock can be ordered dependant on grade
- No restrictions



How do you monitor that stock is ordered at the most competitive prices? (tick all that apply)

- Centrally controlled ordering process
- All engineers / storeroom managers are encouraged to source competitively
- I don't know
- No monitoring
- Multiple quotes are required for orders over a certain threshold



fears were unfounded. We asked our respondents how their own facilities ensured that stock was ordered at the most competitive prices and 42 per cent answered that costs were supervised by a centrally controlled ordering process, with 36 per cent answering multiple quotes are required for orders over a certain threshold, and 27 per cent answering that all engineers and storeroom managers are encouraged to source competitively. Eleven per cent answered that no controls were in place.

Whilst it is clear that cost control processes are in place, our concern is that nearly 63 per cent of respondents have answered that those cost control measures are in the hands of storeroom managers and engineers, who are being required to source competitively, often obtaining multiple quotes. In the case of engineers in particular, this is time that would be much better spent on core activities.

Restricted access

One of the biggest issues for factory stores is access. Free and open access to all may be democratic, but it is all-too-often a recipe for chaos. Equipment is taken out without being scanned or signed-for, and when it is returned it is inevitably put in the wrong place.

Unfortunately, our survey would suggest that open access to all is still prevalent, with 32 per cent of respondents declaring that their facilities placed no limitation on who can access the stores.

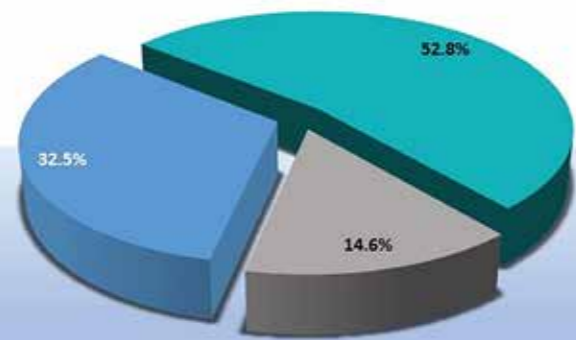
Fifty-two per cent of respondents answered that there is limited access depending on the individual's job. Only 14 per cent answered that there was no access, with all transactions taking place over a store's counter.

However, limiting access is only possible if the factory store is manned. We asked about manned opening hours for factory stores and found that only 23 per cent opened during production operating hours, with a mere 13 per cent open 24 hours per day.

The concern is that more than 38 per cent of facilities are only open during normal working hours (9am-5pm), which presumably means that either maintenance teams do not have access to stores outside of those hours, or the stores are left unmanned. In fact, more than 25 per cent of respondents declared that the stores in their facilities were left unmanned at all times.

Storeroom access?

- Open access to all production/maintenance employees
- Limited access dependent upon individual job specification
- No access with all transactions taking place over a stores counter



“ Stock control from storeroom to field is notoriously poor due to an unmanageable consumption process embedded in a technicians time/parts reporting tool. It's a mess. ”

Out of date, out of mind!

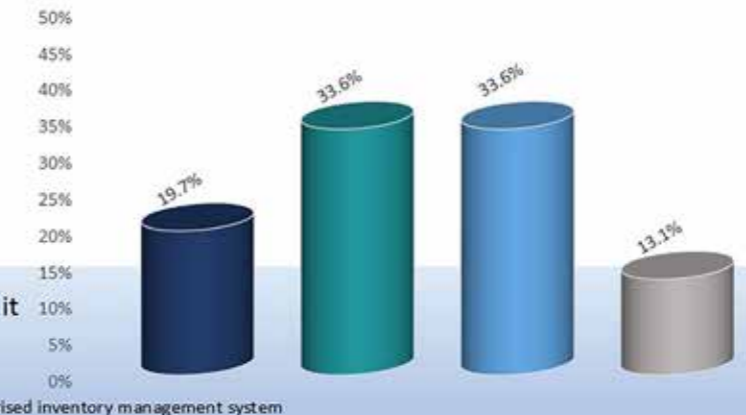
Obsolescence is a major issue for factory stores, particularly those which keep large quantities of stock which have low turnover. It is not unprecedented to find stock that is decades old in badly run stores, or stock which has been stored badly and is no longer fit-for-purpose, with inevitable effects if it is put into production. We asked in our survey how those responsible for factory stores monitor stock to ensure it does not become obsolete.

Thirty-four per cent responded that there is no monitoring of stock for obsolescence, and 20 per cent answered that

their facility conducted an annual review, which, in our view, is insufficient. Only 34 per cent of respondents answered that they used a computerised inventory management system to monitor stock for obsolescence issues.

How do you monitor stock to ensure that it does not become obsolete?

- Annual review of all stock
- Computerised inventory management system
- No monitoring
- I don't know



“ We are not good at reviewing and ensuring obsolete stock is removed and the latest parts stocked correctly. ”

Vending slashes spending

The use of vending machines is purported to be an excellent way of controlling access to stock, particularly items which need to be signed out and returned to stores, such as tooling and expensive cutting equipment. However, our concern is that they are often under-used or misused in many industrial facilities.

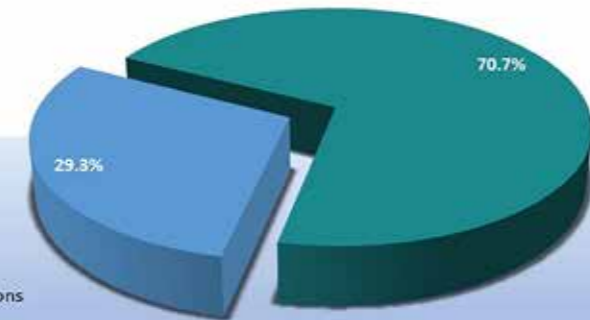
We first asked those who took part in our survey whether they used vending machines. An overwhelming 81 per cent answered 'No', which clearly suggests that the benefit of vending is not being seen by industry. What's more, those that do use vending answered that it is used almost exclusively for low cost and consumable items only. Only 8 per cent of those that use vending answered that it was used for both low cost consumables and items that need to be returned to stores.

Of greatest concern, is the fact that there appears to be little restriction on those who can use the vending machines. More

than 70 per cent of those who answered that vending is used in their premises also answered that there was no restrictions on access to stock in the machines. Only 29 per cent answered that an ID card was issued to production and maintenance personnel. This would suggest that, where vending machines are being used, there is little or no control over who can actually use them, which means that the benefits of using vending, such as budgetary control and reporting, are lost.

What restrictions are placed on employees using vending machines?

■ ID card issued to production and maintenance personnel ■ No restrictions



“ You have to cope with the pressure of keeping things running 24/7, maybe having to use parts from a machine that is not running to keep one going and then repair the machine you have just robbed the parts from. It can be very frustrating and morale sapping.

”

Conclusion

The management of factory stores is a balancing act. Too little stock impacts maintenance repair times and production. Too much stock is a drain on resources and a recipe for inefficiency.

I often call factory stores a 'necessary evil'. In an ideal world, machines would never break down and parts would never be required. The reality, of course, is very different, and this report demonstrates that factory stores are not rising to the challenge of supporting their engineers.

However, it would be wrong to point the finger at stores, without acknowledging the exceptionally difficult circumstances in which they are asked to operate. Storerooms and inventory are all-too-often overlooked and not given the tools, in terms of IT equipment, for example, or external MRO supplier support, to do the job properly.

The vital link between engineering and stores is too often disrupted, which results in poor stores management and inventory control, with inevitable out of control spending on spares and wasted time – often due to engineers not knowing what is in the stores in the first place.

When I speak to senior managers, procurement people and engineers about stores management, they universally agree on the need to take control. But it is not so clear what they want to take control of MRO stores themselves, the stock, the expenditure or the suppliers?

The truth is, to take control, you need to grip all four of them. UK manufacturers have to recognise that spares and parts sourcing is a complex job, which needs specialist skills and resource allocated to it. If those skills are not available in-house,

then industry should consider outsourcing. What is striking about the results in this report is how few of our respondents' companies have undertaken this option. The desire to maintain control is trumping the desire for change.

The answer lies in better linkage between engineering and stores, in order that stores can become the engineer's toolbox and, in the words of one respondent, can be in a position to "predict the requirements of production."

The ability to 'predict' is central to store's operations. Factory stores should be dynamic, constantly assessing the needs and requirements of their engineering 'partners' and working to an agreed strategy.

Only in this way can factory stores stop being a drain on resources, both financial and engineering, and truly support the wider business.

Andy Silver,
Customer Service Director, ERIKS Integrated Solutions

CASE STUDY

Streamlining the stock of a leading radiator manufacturer

The utilities sector requires large amounts of inventory in the form of spares and parts for the network, which, in one case, was exacerbated by the closure of three sites, with all stock being merged into one facility.

SITUATION

The single facility was inundated with spares and required help from ERIKS to rationalise and organise the stock with an estimated value of £1.8 million.

The main site suffered from a multitude of issues:

- Poor product descriptions and labelling of products
- Engineers avoiding storeroom procedures and simply ordering parts as and when they were needed
- Incorrect use of the site SAP system
- Incorrect storage of spares in sea containers in a 'graveyard' area
- £700k worth of 'lost' stock still on the system

SOLUTION

The ERIKS Storeroom Solutions Team firstly began to catalogue all the spares with the main storeroom. As part of the process, the facilities were completely refurbished with greater signage and accessibility to the stock. The team then moved on to the sea containers, whereby all items with an existing SAP number were inputted back into the system with an updated descriptor. Those products without an SAP number were investigated further; some featured an inaccurate product descriptor, which was updated, and those without a record at all were added into the inventory as a new item.

On completion of the full audit, the total stock value was reduced to £1.1 million – as a result of obsolete stock and parts not being logged out. ERIKS now deploys a Continuous Physical Inventory Count System for the utility, which comprises a full physical stock take twice a year to help mitigate against future stock and storeroom issues.

CASE STUDY

Helping a utility take full stock of its spares

When one of the UK's leading manufacturers of radiators needed to refurbish their storeroom, they approached expert industrial services support partner, ERIKS, to resolve the matter.

SITUATION

With factory storerooms, the process of solving one problem often uncovers a multitude of other sins. ERIKS was originally brought in to replace existing on-site pumps used during the painting process, but the scope of work quickly expanded to include the factory stores, which were suffering from a multitude of problems, including more than 5,000 items which had to be scrapped.

SOLUTION

The ERIKS solution included:

- Identification and cataloguing of existing stock
- Relocation of nearly 4,000 fast moving items and 400 slow moving items to a new ground floor storage area
- Implementation of 5S diaries to further improve the organisation of specific product types within the stores
- Dedicated auditing system to log when items left the stores, and ordering of replenishments when the minimum quantity is reached
- Colour-coded booking out sheets to ensure that items are supplied against the correct budget ensuring accurate expenditure tracking
- Implementation of vending machines with weekly re-stocking for PPE equipment

The vending machines give the customer full traceability of stock usage, as reports can be created online via a portal connected directly to the machine. The majority of PPE stored in the vending machines are held in stock at ERIKS' main warehouse, enabling the team to manage the stock using a 'just-in-time' philosophy.

Following the successful refurbishment of the manufacturing site, ERIKS was subsequently appointed to manage the procurement function of the site and source any item which the customer requires, be it on stock, non-stock or capex.

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