

**David Staš**

Vítkovice Steel, A.S.

## **ORDERS EXECUTING SYSTEM INFORMATION SUPPORT IN OPERATION FLAME-CUT SHAPE IN VÍTKOVICE STEEL, A.S.**

### **1. Introduction**

Orders Executing System has privilege position in logistic system of production plant. Its effective functioning, however, requires fast and top information flow from one department to another one and easy access and searching of information in various databases. Orders Executing System Informatic support has direct influence for costs and effectivity of all the process. Slow and unreliable communication can lead for example to loss of customers, production noneffectivity, excessive delivery costs, storage costs, resources costs etc. Integration of Orders Executing System and informatic system of plant offers significant potential for logistic execution improvement.

Informatic support can be fully automatized or clearly manual. In practice is mainly about certain combination both of types. Quality and informatic flows speed that vary depending of ordering system ingenuity and plant informatic system, notably affect ability of producer to provide fast and reliable orders cycle periods, consolidate transport and achieve as low as possible resource level. Delay in information appears often. Manual system seriously limits plant ability of implementation of integrated logistic leading especially decreasing total costs at present keeping or improving provided services level and quality.

These problems are closely discussed for example by [1; 2 or 3].

### **2. Orders Executing System in operation Flame-cut shapes**

#### **2.1. Costs division – Flame-cut shapes**

In scope of VÍTKOVICE STEEL, a.s. company development, the biggest producer of stamped plates on heat condition in Czech Republic, there was decided to strengthen

production sort with higher added value. Perspective area meeting this criterion is flame-cut shapes production expansion. Based on strategic decision of plant management new cost division NS 210 „Flame-cut shapes” arised at the beginning of 2002y.

VÍTKOVICE STEEL, a.s. offer possibility of treatment on heat conditions stamped thick plates to initial semi-products for next mechanical finishing. Those are possible to use for machinery parts production by form of formative flame-cut shapes. Slps are fabricated on CNC led air machines whose thickness is within the range of 5–200 mm, max.wideness is 4 000 mm and max. length 14 000 mm. Flame-cut shapes are delivered without machinery fabricating as semi-product with surface scaled after rolling. Based on agreement there is possible to ensure surface treatments by jetting and varnishing and performing general flame-cut shapes with modified bonded area.

At flame-cut shapes made from common construction steel of th. 10–40 mm standard delivery time is 3–21 days from binding order receiving. In case of micro-alloyed, resp. Alloyed steel terms are stated individually acc. to technological demandingness of plate production, procedures of very burning and flame-cut shapes modifications.

## **2.2. Orders Executing System and realization of commissions**

Orders Executing System for products of Flame-cut shapes operation is possible to split into three basic phases:

### **Pre-launching phase**

It involves process of offer and inquiry leading and „transfer” of orders to production commission run. Offer and inquiry leading involve such activities as inquiry receiving, its judgement from the point of technological feasibility and material covering, capacity allocation, booking system leading, terms incorporation, price assessment, price leading, rentability determination, confirming and issued offer. Transfer order to production commission run involve order receiving, creating so called burning plan (PC-production drawing for NC-burning (air) machines), verification of burning plan (often sent to customer approval), verification of material covering way, ordering plates – issue so called plates commission, uploading flame-cut shapes commission and its release into production.

### **Production phase**

Part of production phase is also ensuring of material covering, feed of input material and realization of flame-cut shapes production. Ensuring of material covering involve plates production or sorting at final parts stock, verification required features of plates (UZ testing, mechanical testing etc.) and their release. Feed of input material involve ensuring of transport of plates, verification of their required parameters (input check) and handing over of plates to the stock including very storage. Finally realization of flame-cut shapes production involve assortment dividing to particular burning aggregates, burning and flame-cut shapes modification, their check, release and attesting.

### **Storage and flame-cut shapes expedition**

Last phase is storage and flame-cut shapes expedition that involve stocking released flame-cut shapes, completion acc.to commissions or delivery contracts, packing and additional signing acc.to customer requirements, loading, issuing of bill of deliver and invoicing.

## **3. Present stage of informatics support of Orders Executing System for Flame-cut shapes operation**

### **3.1. SŘHV – system of metallurgical production leading**

Informatics system of plant VÍTKOVICE STEEL, a.s. is based on communication of SHV (system of metallurgical production leading) with particular informatics systems of production units leading and Integrated Informatics System (IIS). Integrated on-line system SHV secure the highest, it means IV. Level of production leading. Force of application of informatics system SŘHV affect most of functional areas and production units of company (quality dep., technical dep., financial dep., trade dep., production and logistics, steel works, rolling mills and flame-cut shapes division).

Informatics support of Orders Executing System in VÍTKOVICE STEEL, a.s. is characteristic by its hierarchic set: taking commission, its technical elaborating and incorporation into production runs on IV. level of leading – SŘHV, from where transfer of needed technological dates run into subject systems of III. level – informatics systems leading particular aggregates at iron-mill. After realization of particular technological operations related dates are consequently transferred back from II. to IV. level. Then final part is placed to the stock when all the information related to storage including expedition and dispatching dates for invoicing into system IIS are filed in SŘHV again.

### **3.2. Present stage of IS for Orders Executing System support in scope of all company**

In scope of all company system SŘHV support as a standard following main activities related to process of orders executing:

- Setting of order,
- Technical running of order,
- Assessment of price,
- Issue of contract,
- Conversion of order to production commission,
- Issue of commission sheet,
- Information of commission semi finish stage,
- Supply of data for invoicing.

---

Owing to the fact that contribution author works in area of Flame-cut shapes Operation Production Leading following part is dedicated to *informatics support of logistic-production processes security and their optimalization* in scope of this operation.

### **3.3. Basic functions of SŘHV supporting process of orders executing**

In existing informatics system there are following sheets and functions available for respective employees in operation „Flame-cut shapes” to support Orders Executing System:

- *Commission stage*: mentioned function enables to demonstrate in what phase of semi finish particular commission appears, and with detailed analysis to individual plates.
- *Review of filling monthly limits*: by means of this function Review of commission filling will be demonstrated within the range of actual month.
- *Delivery notes – NS 210*: By means of this function is possible to demonstrate delivery notes issued by rolling mill operations for deliveries of input material for division „Flame-cut shapes”. *Review expedition – plates*: It is about printing set-up with review of all delivery notes and bills of delivery for chosen period. This set-up contains bills of delivery numbers, transport way, wagons or cars numbers including particular information about respective commissions.
- *Inquiries/commissions*: In scope of those sheets are concentrated dates and information that are nearly related to orders uploading and issuing production commissions – customer order No, customer identification data, transport way, insurance type, production type, acceptance inquiry terms, offer issuing, acceptance of order and commission issuing, commission No, etc.
- *Bills of delivery – flame-cut shapes*: this function is for uploading, changes or their cancellation when they contain all needed dates about despatched goods and information for transport realization.
- *Delivery note – KVARTO/DUO*: this function is for issuing or modification of delivery notes issued in scope of intra-plant hand over from division Flame-cut shapes back to rolling mills.

## **4. Possibilities of informatic system development in operation Flame-cut shapes in area of Orders Executing System support**

As a result of dynamic development of young operation new requirements for informatics support development still arise for effective Orders Executing System. In scope of informatics system improvement process is realization of plenty of new requirements in production area. For their effective realization is possible to use following system of realization priority determination that is based on judgement of two basic criteria:

- degree of importance for operation and company – includes importance judgement and expected contributions of realization of informatics systems suggested changes to which is possible to use following subjective point evaluation:
  - 4 ... extraordinarily needed for company
  - 3 ... partly needed for comp., extraordinarily for chosen employees
  - 2 ... extraordinarily needed for chosen employees
  - 1 ... needed for chosen employees
- timely demandingness of solution – respects expression of internal employees of informatics to timely demandingness of uploading new functions by means of following point evaluation:
  - 3 ... implementation in time of several days, max. 1 week
  - 2 ... implementation in time of several weeks, max. 1 month
  - 1 ... implementation in time of several months

At final setting of priorities is necessary respect also next factors. For example utilization of internal employees of informatics for other tasks and projects solution in scope of IS development in company or hardware and software fittings of particular sites. Important limit criteria is also logic sequence of particular areas of informatics support solution.

#### **4.1. Suggestions of chosen areas of IS development on Flame-cut shapes operation**

Examples of particular measures suggestions in scope of company informatics system development that would, according to opinion of author, contribute to increasing of Orders Executing System affectivity in production area of Flame-cut shapes operation, are following:

- Creation of binding between flame-cut shapes commission and plate as a input material. It is a need of creation a function enabling to refer (and cut-off) flame-cut shapes commissions for particular plates binding to burning plans. This solution enables actual views for plates stage on the stock (plates free, reserved for commission) and stage of planning of new commissions.  
*Degree of importance: 4 Timely demandingness: 1*
- Creation of function for transfer of any flame-cut shape (plate) being on stock of Flame-cut shapes operation from original plates commission for any other plates commission in scope of numeral line of commission of Flame-cut shapes operation, that is for plates from both of rolling operations. It would be elimination of lengthy processes (outage, giving back to rolling mills, transferring) related to change of original commissions. This process of commission change is necessary in case of usage of plate for other flame-cut shapes commission for need of issuing attests for customers.  
*Degree of importance: 3 Timely demandingness: 2*

- Creation and implementation of attestation issuing system for flame-cut shapes in scope of commission filling of operation by means of integrated informatics system. Process of issuing attests is in present based on method manual filling out of forms that must be between particular authorised sites physically distributed. This step is related to bind creation solution between flame-cut shapes commission and plates as a input material.

*Degree of importance: 4 Timely demandingness: 1*

## 5. Conclusion

Suggested measures are pointed to company leading in direction to inside. Informatics system, however, must be also a tool for plant leading directing outside, it means to customer. For presently real possibilities have existed for usage of informatics system that is based on data communication of SŘHV with particular leading informatics system of production unit in orientation to customer. In scope of business process support in practice it is implementation of electronic way of release of orders by means of terminals at customers from which information (standardized trade forms/documents) are transferred through phone lines (by means of internet) between supplier and customer PC. These are data electronic exchange systems (EDI-Electronic Data Interchange). Which is positive above all, these methods insert maximum speed (shortening order cycle) into uploading and handing over of orders and accuracy. Management can use time that is saved in phase of handing over of orders to decrease resources stock and to make more effective transport operations (delivery consolidation).

## References

- [1] Lambert D.M., Stock J.R., Ellram L.M., *Logistika*, Computer Press, Praha 2000.  
 [2] Vogt J.J., Pienaar W.J., de Wit P.W.C., *Business Logistics Management: Theory and Practice*, Oxford University Press, Southern Africa 2002.  
 [3] Pernica P., *Logistický management*, Radix, Praha 1998.

## INFORMATYCZNE WSPOMAGANIE SYSTEMU REALIZACJI ZAMÓWIEŃ W PRZEDSIĘBIORSTWIE VÍTKOVICE STEEL, A.S.

### Streszczenie

Motywym przewodnim artykułu jest uporządkowanie systemu realizacji zamówień w zakresie systemu logistycznego w przedsiębiorstwie produkcyjnym. Rzeczywistą możliwością przebudowy systemu daje

stworzenie i wdrożenie odpowiedniego systemu informatycznego. Systematyczne wykorzystanie takiego systemu prowadzi do podniesienia efektywności wszystkich procesów w firmie. W artykule pokazano propozycję rozwiązania tego problemu w przedsiębiorstwie VÍTKOVICE STEEL, a.s. Opisany został zarówno aktualny stan informatycznego systemu realizacji zamówień, jak i zakres działań i kroków podjętych w celu przyszłego rozwoju tego systemu.