

# Raising shipyards productivity after Covid-19

Learn how the surgeon-nurse-principle helps you to  
boost your production performance



Prepared by

LEAN MARITIME



# Raising shipyards productivity after Covid-19

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The economic impact of Covid-19 on the cruise industry is undoubtedly the most critical crisis for the cruise industry and for shipyards specialized in passenger ships. All 400 cruise ships are stopped, and newbuilds are postponed. A restart of the cruise industry at full capacity is unpredictable. The shipyards and affected suppliers will struggle for survival and have to avoid a shut down. However, the companies who take the right actions will not only survive but have the chance to implement measures to boost productivity and to become stronger and better than before. This article will discuss some elementary actions required to avoid continuous shutdowns of working areas and will introduce measures to lift the production to a new level of operational excellence. The result of the following actions can lead to a significant higher productivity and lower costs through the entire production process.

## **Installation of a central production and prevention department**

Merge and centralize planning, governance and pandemic procedures into a central production and disease prevention department. By a holistic approach the central planning and control department for all activities on the yard after the pandemic, will help to increase transparency, to accelerate the decision-making process and to monitor all financial, operational, and health KPIs. The installation of the department will be permanent and can be adjusted according new requirements and developments.

**Exhibit 1**

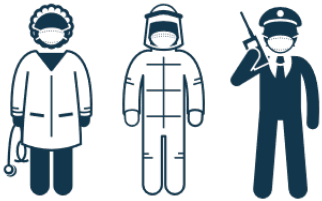
New, adapted and strengthened departments and roles at the shipyard



**Central control and monitoring**



**Central job preparation**



**Health condition monitoring**



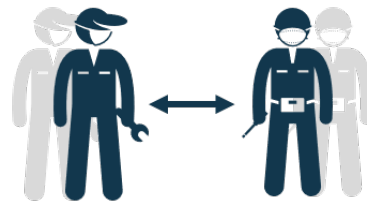
**Procedure supervision**



**Sanitize team**



**Extended yard and deck logistic**



**Worker density control**

Merging of planning, job preparation and safety institutions of the yard into the central department will ensure fast, consistent, and reliable decisions. The department can use tools to automatize decision making and tools for predictive analytics and forecasts.

Proactive communication and stakeholder management with regards to the current situation and ongoing plans with customer, suppliers and financing partners is to be considered as relevant additional task to build and maintain trust for this department.

### **Adapt shift system including working time, start and end time by trade**

To increase productivity and to reduce infection rates the total number of worker per shift and area has to be limited. With a consequent introduction of a 2-shift or 3-shift system the simultaneous total amount of people on the yard can be reduced significantly. Additional measures can be to reduce the daily working time to 6 hours without lunch break and to use weekend work to maintain the total weekly working hours. Or to enlarge the working time and maximum weekly hours to reduce the total required number of people and to reduce handover of tasks. The different trades can have shifted start and end times by 15 or 30 minutes to avoid waiting cues in front of productions entries. Clear inbound and outbound paths are mandatory to limit crossing of people.

### **Introduce work permits for teams and work areas to reduce worker density**

The central production planning department must monitor and to regulate overall worker density in the workshops and on the vessel. Work permits must be issued by area and for fixed teams. The teams must stay together to avoid any cross-infection by working in different teams. They can rotate between day and night shift as required but the team as a whole is fixed. The use of visualization tools will help to have a clear overview of the density of areas. A daily feedback of the accomplished work, the start of the quality and acceptance process and the release of the next work permit based on the progress will support the overall control of the work and the productivity measurement. The increase of transparency on a daily basis for all operations helps to monitor the productivity indicator, to identify deviations in execution and to define immediate mitigation actions. The risk of accumulation of small delays to an overall delay can be reduced significantly, thus saving costs for extraordinary work to keep the schedule close to delivery.

### **Apply the surgeon–nurse-principle to boost productivity**

One of the key success factors for high productivity and best quality in manufacturing and construction are perfectly designed and integrated logistic processes. The separation of the value-adding activities and the support activities like material supply is defined as surgeon-nurse-principle.

#### **Exhibit 2**

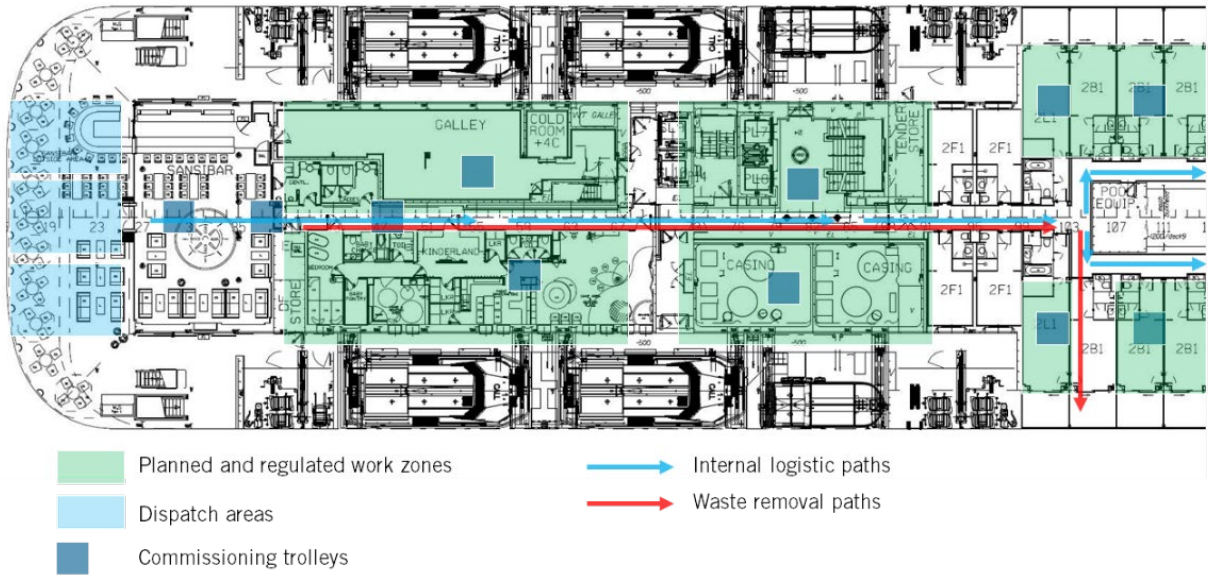
Increase productivity by applying the surgeon-nurse-principle



The specific installation job is the patient, the skilled worker is the surgeon and the logisticians are the nurses. The objective is to increase the value-adding time of the surgeon by avoiding travelling around to find material. The logistician supplies all necessary material and tools to fulfill the specific job at the right location. By implementing the surgeon-nurse-principle, the productivity of the skilled worker can be increased by over 30-40%. The logistic teams are fully equipped with protection masks and clothes. The material is planned by the job preparation team based on requests and the issued work permits of the central production and prevention department.

### Exhibit 3

Clear definition and separation of logistics and work areas and travel paths



### Ensure canteen safety, sanitation cleanness and personal hygiene regulations

Ensure performance of recommended hygiene rules from the authorities, adjusted to the yard specific demands and off-time: e.g. wear protection masks, keep distance of 2m, use sanitizer. Enlarge the canteen facilities with open tents or other facilities. Have a strict cleanness plan for sanitation facilities.

Disinfect handrails, doorknobs, punch clocks as required with a riding sanitize team during and between the shifts.

### Consequent management of continuous infection detection

On daily basis, control and monitor symptoms of possible infection of the worker before the shift starts. Install thermo cameras in front of the entries. Use smartphone apps for self-diagnosis to access the yard.

In case of a positive answer, the whole team will need to stay at home upon test results. In case of infection of a team member, the whole team will need to go for quarantine. But based on the current infection rates, the recommendation of the authorities and the actions can vary as required.



## Summary

The Chinese use the same wording to describe the concepts of crisis and opportunity. The current crisis can be seen as the "perfect storm" to implement long delayed but necessary actions to increase productivity. With consequent implementation of a good work planning procedures based on the actual progress, fast mitigation actions on deviations, good analytics and forecasts combined with fundamental lean principles can boost the productivity to a next level. Do not miss the chance of a crisis.



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