



# Astican (Astilleros Canarios)

## Ship Repair Yard

### Need

Astican shipyard was in a search of automated software to meet shipyard operations, essential permit processes and compliance requirements

### Challenges

To manage their disparate work procedures of different vessels with a single integrated system, e-PTW stood instrumental in ensuring safe execution and efficient planning of high risks activities across the shipyard.

### Benefit

The high-risk ship repair environment overcame inconsistencies by establishing a digital conventional process along with a standardized permit to work system. With the automation of routine tasks, reliability on paper-based methods decreased.

Astican (Astilleros Canarios) is a ship repair yard, whose well-experienced staff and contractors provide the capabilities to perform repairs, conversions and maintenance on all types of vessels and offshore units. A yard in continuous development, their accumulated know-how has made Astican a reliable shipyard for successful projects – it has established its presence all over the world.

### Complexities in repair planning, engineering and production

A ship repair includes all ship conversions, maintenance programmes, overhauls, major damage repairs and minor equipment repairs – to meet health and safety requirements, updates and conversions remain necessary.

New construction and repair processes essentially use the same manufacturing practices, facilities and support shops. These processes demand excellent planning, engineering and interdepartmental communications. For the shipbuilding industry, process flow is well-planned - they estimate, plan and engineer the job, rip-out work, refit steel structures, repair production, conduct test and trials and offer ship delivery.

Some of the key personnel involved in the shipbuilding and yard activities includes:

- Welders and solderers
- Structural fabricators
- Plumbers
- Electricians
- Riggers
- Carpenters
- Quality control inspectors
- Supervisors
- Marine surveyors
- Engineers
- Naval architects and designers

Permit forms are an essential part of their working scenario – with Astican undertaking



## Solution

### Customized e-PTW software

- Overview of people and site activities
- Simultaneous operations conflict management
- Permit re-validation and requests using mobile app
- Multilingual software capabilities – English and Spanish
- Permit tracking, e-mail notifications and digital signature capabilities
- increased efficiency
- SaaS platform and server provision (Microsoft Azure)

more than 180 projects annually with a workforce of an approximate 1500 people, their tasks fall under the high risk and hazards category. Every case calls in for highly specialized workers working in close proximity - their nature of work encompasses hot work, blasting, painting, lifting operations, electrical and mechanical jobs, scaffolding, diving operations, civil work and tank cleaning.

In addition, a great portion of work is performed outdoors, where the effects of weather extremes can aggravate hazardous conditions. Much of the manual work involves heavy equipment and material.

While evaluating for a digital solution compatible to their business needs, their stakeholders expressed interest in standardizing their entire Permit to work process. One of the critical challenges to their work environment was the integration of uniform permit templates – even though Permit to work forms existed, these were subject to change to accommodate for different work scenarios. Harmonized set of templates were missing which affected the transparency and communication.

Considering that work is performed in high risk environments like confined spaces and work at height, standardized forms could solve many of the existing issues and regulate the processes. This industry requires blending of many skilled trades, as the construction of the hull (main body of the ship) itself is complicated - it comprises of tanks, cargo holds, sophisticated combat control centres or simply sleeping compartments.

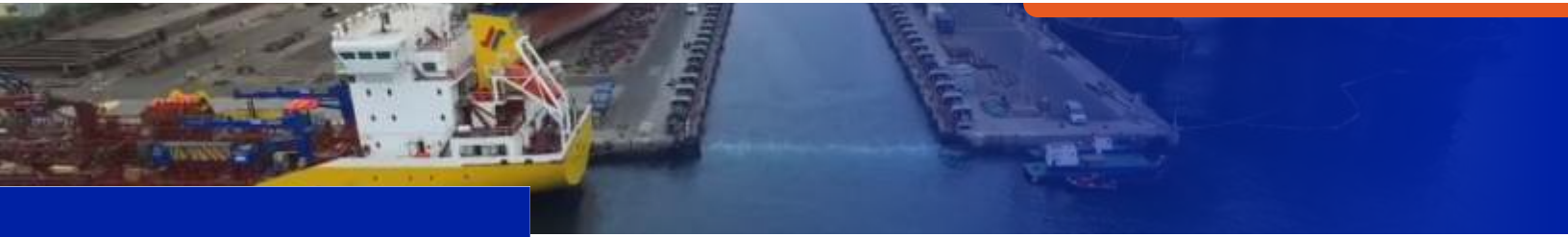
Since the work is interrelated, the results of one process could endanger personnel involved in another process.

Traditional hard copies were difficult to manage as their process from request to execution consumed time. With more than 100 permits generated on a daily basis, initiatives to automate the PTW process made complete sense.

After extensive discussions with ASK-EHS safety personnel, Astican corresponded with ASK-EHS online and shared their work permits in April 2019. With the help of subject matter experts and in collaboration with the Astican personnel, ASK-EHS professionals created standardized forms to suit their entire project lifecycle.

For the system to provide visualization of processes and be accessible to the users, digital permit to work was essential. Each year, Astican was involved 160-180 projects, and an important aspect of their work lifecycle was their timeline – each project lasted for a minimum of one to three weeks. Multiple parties were involved in each project – these consisted of specialized contractors (e.g. Vessel contractors) and their workers, Astican's personnel and the ship workers (e.g. captains). With a minimum of 100-120 contractors at their disposal, each team of contractors consisted of 20-30 working personnel.

It took ASK-EHS, one month to standardize their whole process – uniform checklists for each job-role and associated activities were constituted. For e.g. firewatcher, isolation areas, confined spaces and tank verification were adapted for the digital platform.



*“With a flexible and adaptive environment, the software allows a clear and simple interface offering automated time intelligence. Permit management remains hassle-free due to e-PTW's clear distinction of work area permits, their accurate notifications and easy-to-use abilities.”*

Another key differentiator in this case was the built prototype which facilitated detailed analysis of software at the user end. As per the Astican protocols and the usage requirements, a minimum of 2-3 people per contractor team were responsible in the execution and verification of the work permits. The automated PTW software reduced opportunities for mistakes to be made, resulting in efficient processing of the permits.

A digitized permit to work system streamlines activities and eases the process of safeguarding contractor and worker data – clear oversight of work and efficient execution is enabled. Astican's User Acceptance Testing lasted for a month, wherein ASK-EHS software experts guided the users from start to end of the permit's life.

## Streamlined processes for a better and informed workforce

While implementation, there were numerous interventions and issues faced by the Astican employees, and ASK-EHS designed the software as per their considerations to the highest levels of usability. The feature-rich real time dashboard prompts the employees to take remedial actions wherever required. In addition to full visibility and 'at a glance' view of the work permits, e-PTW was operable from the field through a mobile app. Be it a new user registration, approval of work permits (using digital signatures) or any permit verifications, mobile app came handy while dealing with essential ship-repair scenarios.

The entire execution took 8 to 10 weeks – where standardization of the permit forms took 4 weeks and the delivery on UAT took 4 to 5 weeks. Post-delivery, the software was rolled out since July 2019 on a project by project basis. Currently, 200 to 250 people are involved in managing the digital solution.

Till date, e-PTW is implemented in their whole shipyard, and the software creates a repository of all permit-related tasks, project-wise.

ASK-EHS Permit to work software is recognized as a source of valuable insights - it allows Astican to objectively look at the process and identify areas for improvement. In the end, ensuring the process is optimized reduces the risk of injuries caused by non-compliance as the software remains an indispensable source of data.

Safety personnel are given a comprehensive view of their work executed onsite – the software provides them an easy insight to the ongoing schedules and helps bridge the communication gap with its workers.