

Easi-Load True Dock Container Loader

Easi-Load (Tru-Dock) Container to Building
integration innovation

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1.0 Executive Summary

The meat industry is confined to the utilisation of refrigerated transport and cold storage facilities to export product from Australia. These “reefer” trucks are not always reliable in terms of temperature control and availability for processors. Also requiring additional product handling, once arriving at delivery location if the products are to be exported to an alternative location, are required to be transferred from reefer trucks to a storage facility and then onto an export container, post freezing or storage until a container can be filled. This use of cold storage facilities often limits exporters to certain orders, based off ability to fill a shipping container, cold storage facility storage capacity and cost to store product until a container is filled.

The objectives of the project were for the exporter to design, install and commission a container loading system at ground level on site over an 18-month period. This would provide the exporter with the ability to eliminate the need for daily transport of product to a storage facility and eliminate storage costs of product until a container worth of product was available for export. The container loading system would allow for the container to be loaded across a 48hr period, delivered directly to the port for export if transport was available. This would increase the number of containers and orders that could be dispatched from the exporter, increasing production and the exporters position in the market.

The project commenced in early 2021, with design and technology selection completed on time. Following milestones were delayed due to material and contractor availability experienced because of Covid-19. Project construction was completed by May 2021, with commissioning completed by June 2021. A key piece of project equipment, Mobicon container carrier, was purchased and delivered by late August 2021. Project was to undergo a 12-month review period, however experienced multiple project manager changes due to resignation of several staff during this period. The project was assessed retrospectively to determine project success.

The project was deemed a success by the exporter, coupled with the purchase of the Mobicon container carrier. It has provided the exporter the capability to send an additional 1.5 containers per week and take additional orders for frozen carcasses that would not have been possible prior to the project. It has eliminated the reliance on an external cold storage facility for ongoing storage of frozen product until a container can be filled or a container becomes available. The Mobicon container carrier has provided the exporter the ability to secure, and store refrigerated containers onsite, ready to be used for orders when needed, eliminating the reliance of waiting to replace a full container with an empty container or only being able to take orders when 2 containers are available in a 2-day time frame.

The exporter has evaluated the project as a success, increasing the company’s flexibility and in turn, making it more competitive in the market. It is recommended a system of the Easi-Load / TRU-DOCK be assessed for other meat processing sites that currently utilise external cold storage facilities prior to exporting of their products and with limited onsite chiller capacity. If facilities have onsite freezing facilities, a project of this kind makes more economical sense, however, is specific to each individual process. The purchase of a Mobicon or a vehicle of its likeness is recommended to utilise the full benefits of the Easi-Load / TRU-DOCK.

Future recommendations would be to explore the feasibility of installing a dual container system. Eliminating the need for replacement of a full container with an empty container before any filling can occur can increase load out efficiencies if the exporter has the staff and orders to warrant a dual loading facility. Future projects should also consider methods to reduce manual handling of loading products into the containers where possible, incorporating these solutions into the design.

2.0 Introduction

For exporters with onsite freezing capacity, product is required to be transported off site using “reefer” trucks. Ongoing storage of product at freezer storage facilities is required until enough product is compiled to fill a shipping container, to then be loaded and shipped to its desired destination. With products being handled several times from their original destination to storage facility and onto a container to be exported once full, this increases risk of product quality, cold chain integrity and increases the chance of injury or damage to workers and workplaces.

The objective of the project was to design, implement and evaluate a novel methodology of design and implement an easy and simple loading system that will maintain safety to person, whilst maintaining cold chain quality, provide increased production flexibility and reduce reliance on external contracting freezer storage facilities. This solution would in turn provide the exporter with the ability to load a shipping container onsite over a 2-3 day period, until full and ready to be trucked directly to the port for export, eliminating multiple product handling and need for freezer works storage.

This project selected the “Easi-Load / TRU-DOCK” system as the most viable option to provide this solution. Installed on the ground, it is a level shipping container loading system, eliminating the need for a truck stand for a period whilst loading or offloading the container. Easi-Load / TRU-DOCK Loading Pods consist of a revolutionary range of integrated systems for high volume container loading. Leading-edge solutions to increase productivity and safety performance, Easi-Load / TRU-DOCK Loading Pods are designed for unparalleled ease-of-access, high turn-around and complete environmental control for all container types. The Easi-Load / TRU-DOCK Loading Pod System brings a range of impressive innovations together giving an all-weather loading environment with a high level of safety and biosecurity.

In association with Easi-Load / TRU-DOCK system, a Mobicon container carrier was purchased to provide the flexibility to the exporter with onsite loading and movement of containers. Upon selection, the project was aimed to be completed in a 4-month time frame, with a 12-month monitoring program performed post commissioning to assess the success of the project.

Project budget was set at \$293,000.

3.0 Project Objectives

3.1 Acquire and install/retrofit Easi-Load / TRU-DOCK system into V&V Walsh logistics operations

The exporter was to seek an alternative container loading system to replace the use of “reefer” truck for the transport of frozen carcass product.

Once selected. Existing load out dock was to be modified and retro fitted with the Easi-Load / TRU-DOCK system without compromising daily production and use of existing loading docks.

3.2 Commission system

Easi-Load / TRU-DOCK system was to be commissioned after a 4-month instillation process. Training of maintenance and operating staff was to occur over a 1-month period of use to be deemed competent of all aspects of the Easi-Load / TRU-DOCK system and the Mobicon container carrier.

3.3 Reduce or Eliminate loading and offloading of container trucks and use of freezer storage facilities

Easi-Load / TRU-DOCK system was to eliminate or reduce the reliance of Reefer trucks for transportation of frozen product from site. Also reduce the exporters reliance on the use of off external freezer storage facilities to hold product until a container a full container worth of stock was available. This would greatly reduce exporter refrigeration costs and provide a great deal of flexibility to the exporter regarding production capacity, fulfilling additional orders that would have previously been unfeasible for the exporter to do so.

3.4 Report on operation and realised benefits after 12 months of operation

After 12 months of operation, the exporter was to provide an updated report on the project and the benefits, if any, that it has provided.

4.0 Methodology

4.1 Milestone 1 – Project Design

Project design was completed in January 2021. Integration into the facilities exiting trucking dock was designed to maintain the exporter’s ability to continue to use reefer transport units during the construction and continue BAU. The Easi-Load / TRU-DOCK system design allowed for 40-foot container to be attached to the system at ground level. Designed to be relocated using a Mobicon container carrier or by a Hiab container truck, this was designed to provide redundancy if a Hiab was unavailable or if the Mobicon was unavailable for unforeseen reasons.

A traffic management plan was developed for the area to ensure both the Easi-Load / TRU-DOCK system would not hinder access to the existing Reefer dock by trucks once completed.

4.2 Milestone 2 – Site Modifications

Site modifications commenced in late February 2021. The truck dock was modified in preparation for the Easi-Load / TRU-DOCK system. (Image 1) Some delays were experienced with regards to procurement and delivery of fire-retardant wall panel, extending the project delivery time.



Image 1: Truck dock preparation for the Easi-Load / TRU-DOCK system.

4.3 Milestone 3 – Instillation

Installation was completed by mid-May, 2021 (Image 2). Project was delayed again due to prolonged delivery times, allotted to Covid-19 transport complications at the time experienced for all products. Instillation was efficient and was completed without any affects to BAU and no incidents occurring. Contractor availability to complete the work was restricted at times, due to Covid-19 outbreaks. The project manager left the employer in May, seeing out the completion of the instillation.





Image 2: Installed Easi-Load / TRU-DOCK system.

4.4 Commissioning

Commissioning was completed by June 2021 with maintenance and load out staff/ management all passed out on operation of the Easi-Load/ TRU DOCK system. It became fully operational in July 2021.

Mobicon container carrier was purchased in July 2021. Delivery was delayed and was delivered in August 2021. Maintenance and load out staff were trained and passed out to operate the Mobicon (Image 3)



Image 3: Truck dock preparation for the Easi-Load / TRU-DOCK system.

4.5 Review and Reporting

Project was plagued by project manager and staff associated with the project resignations across the timeline of the project, leaving the project tracking, review and reporting to occur in hindsight, not regularly over the planned 12-month period. This report aims to serve as the retrospective reporting and review of the project.

5.0 Project Outcomes

Several Outcomes were identified from the 12-month assessment of Easi-Load/TRU DOCK system operation, in association with the Mobicon container lifter.

5.1 Security of product

Temperature control: Reduced handling and transport of carcasses from reefer to freezer/cold storage facilities has provided more consistent temperature control, allowing carcasses to remain at the constant temperature delivered by the refrigerated shipping container during transport.

Reduced handling: Reduced handling by up to 200% of product has occurred as a direct result of the Easi-Load/TRU DOCK system. This has eliminated the transferring of stock from reefer trailer to cold storage facility, movement within the facility and finally to a transporting container at time of export.

5.2 Reduced labour costs

Increased production capacity of the facility, provided by the Easi-Load/TRU DOCK system inadvertently reduces the plant labour operating costs, making the business more competitive in the market with regards to cost of product per kg.

5.3 Reduced storage costs

For every mutton or lamb sent to a cold storage facility, significant savings were achieved per carcass.

5.4 Reduced trucking

Trucking cost has been halved with the addition of the Easi-Load/TRU DOCK system.

The need for reduced trucking also improved reliability of orders, limiting the reliance on reefer trucks for transporting product daily, that historically proved difficult to secure for daily orders.

Inadvertently, the scope 3 greenhouse gas emissions related to the carcass trucking has also halved.

5.4 Increased production

A direct result of the Easi-Load/TRU DOCK system has been an increase in production capacity. The system has provided the facility the ability to increase daily production and store frozen carcasses onsite until a full container is ready for dispatch (2 days). This has allowed the facility to process to request of orders, no longer limited by the availability of storage capacity at cold storage facilities historically used or truck reliability.

Increased production has results in up to 2.5 containers being sent per week, compared to the prior 1 to 1.5 if carcasses were to be trucked to a cold storage facility for freezing or storage until a container shipment was ready.

Increased ability to process has also resulted in additional revenue streams through reduction of set operational costs by increasing number of lambs / muttons processed, making the business more competitive in their markets.

5.6 Versatility for production and ordering

Increased control of product handling, delivery and storage of additional containers onsite has been a direct result of the project. The Mobicon container lifter allows for empty containers to be stored onsite once available. This allows for empty containers to be secured when available, even in the event when orders have not been placed or only when a transport truck is available to remove a full container and replace it with an empty container, historically limiting the number of containers being able to be dispatched from the site.

5.5 Project pay back

Project pay back has been calculated based off the lower of the 2 profit margins for containers exported. Market variability has also been factored into the payback calculations, conservatively estimating the Easi-Load/TRU DOCK system will allow for an additional 52 containers to be sent annually. The cost of the Mobicon container carrier has also been accounted for in the project pay back.

When assessed, project payback was determined a success, providing a pay back in less than 5 years.

6.0 Discussion

The Easi-Load/TRU DOCK system has provided the exporter with several benefits. Increased product security reduced operational costs, ability to meet market demand, process to order not to availability of trucks or cold storage facility space and increased production.

The increased in security of product through better temperature control and reduced handling will provide a better shelf life of product being exported, reducing risk of product rejection or damage. This is particularly important in air or sea freight where containers are subject to high temperatures experienced in Australia, reducing the transport of product from several chilling facilities/containers to being now maintained in a single constant container from point of process to final delivery. Cold chain management is of great importance to export markets and the Easi-Load/TRU DOCK system has improved this reliability.

Assessed during economic challenges of Covid 19, with difficulty securing truck drivers, transport trucking, container real estate on ships and refrigerated shipping containers, the Easi-Load/TRU DOCK system provided the exporter with greatly needed variability and capacity to work within the restraints of this complicated time, securing containers once available, to be stored onsite until an order could be placed. The ability to send containers once a ship was available greatly reduced storage costs for the exporter at cold storage facilities and maintained their ability to accept orders based off less variables than if reliant on multiple at once (container availability, cold storage facility capacity, daily trucking to cold storage facility etc.). Had this system not been in place, the exporter would have been unable to process as many orders that it did during this time.

Project payback proves to indicated project success even when accounting for the Mobicon container carriers cost. With the additional versatility provided by the Mobicon, the exporter can accept empty containers on site when available, not only at exchange of containers. This has allowed the exporter to secure the scarce resource of refrigerated containers when available, not reliant on when the existing container is ready for delivery. Prior to the Mobicon being used, container delivery was limited to when a full container was ready for dispatch, which may not co-inside with a replacement container, preventing further orders.

7.0 Conclusions / Recommendations

The exporter has concluded the overall project to be a success. The flexibility and security the Easi-Load/ TRU DOCK system has provided to process, store, and ship product at the leisure and demand of the business has increased the sales potential and competitiveness of the company. The projects 12-month reporting period was plagued with multiple project manager resignations, causing the project success to be retrospectively assessed and reasoning for the delay in the final reporting being completed.

In an economy where shipping containers, reefer trailers and truck drivers are proving to be increasingly scarce, the Easi-Load/ TRU DOCK system has proven to greatly reduce the demand for the forementioned services in high volumes. Improving product control for the exporter through reduced handling of stock whilst also increasing sales capacity through reduced reliance on trucking contractors allows for meat exporters to reduce costs in exporting frozen or chilled products, eliminating the need for intermittent off-site storage until a full shipment is available for export.

Reduction of daily trucking deliveries to bi-weekly also assists the meat industry to reduce their scope 3 emissions associated with transporting of goods from their facilities.

The exporter would recommend the assessment of installation of an Easi-Load/ TRU DOCK system or of similar likeness for any exporter or producer with limited onsite storage for frozen or chilled product that is currently transported off site daily to external storage facilities. Every site application will be specific to their operation, however the Easi-Load/ TRU DOCK system offers several benefits that may make it feasible, increased if a Mobicon container carrier or vehicle of its likeness it purchased as well. Future projects should also consider methods to reduce manual handling of loading products into the containers where possible, incorporating these solutions into the design.