

RESEARCH REPORT



LESSONS
IN **FAILURE:**
AUTOMATION
AT THE PORT
OF AUCKLAND

MAY 2023



ITF

THE INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF) IS A GLOBAL, DEMOCRATIC, AFFILIATE-LED MOVEMENT OF 740 TRANSPORT WORKERS' UNIONS RECOGNISED AS THE WORLD'S LEADING TRANSPORT AUTHORITY. WE FIGHT PASSIONATELY TO IMPROVE WORKING LIVES; CONNECTING TRADE UNIONS AND WORKERS' NETWORKS FROM 153 COUNTRIES TO SECURE RIGHTS, EQUALITY AND JUSTICE FOR THEIR MEMBERS.

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Purpose

This report seeks to learn lessons from the failed automation project at the Port of Auckland. We attempt to understand:

- The decisions leading up to automation and why implementation failed
- The impacts of the project and its failure on the port, its communities, its users, and the wider New Zealand economy
- The impacts on the port workers, particularly on their health and safety.

Acknowledgements

The following authors of this report pay our respects to the families and *whānau* of workers killed and injured at the port, particularly during the automation project. We thank all those who have assisted our work. In particular we are grateful to Craig Harrison and the officials at the Maritime Union of New Zealand, the workers who spoke with us, and Professor Timothy Hazledine, Emeritus Professor of Economics at the University of Auckland – *Waipapa Taumata Rau* who conducted the modelling on the cost of shipping delays associated with the automation project.

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CONTENTS

EXECUTIVE SUMMARY	6
LESSONS AND RECOMMENDATIONS	14
TIMELINE	22
SECTION 1: WHY AUTOMATION WAS ATTEMPTED	24
AUCKLAND WAS A LEADING PORT PRIOR TO AUTOMATION	24
THE DECISION TO PURSUE AUTOMATION	27
MANAGEMENT OBJECTIVES	28
WORKFORCE'S INPUT DISREGARDED	29
SECTION 2: THE FAILURE OF AUTOMATION	32
2016-2019: AUCKLAND SHEDS CAPACITY	32
2020-2023: SERIOUS INCIDENTS DERAILED AUTOMATION	34
PROJECT SUSPENDED	36
END GAME	36
MISSTEPS AND FAILURES: THE MISSING VOICE	37

SECTION 3: CONSEQUENCES FOR THE PORT	40
PRODUCTIVITY CRASHES	40
CONGESTION CHARGES	43
IMPACT ON POAL FINANCIAL PERFORMANCE	44
COUNCIL OWNERS' DESPAIR	45
DECLINE RELATIVE TO OTHER PORTS	47
SECTION 4: WIDER IMPACTS ON NEW ZEALAND	48
ECONOMIC COST OF DISRUPTION AT PORT OF AUCKLAND	50
SECTION 5: IMPACT ON WORKERS	52
AUTOMATION FAILURE PUTS PRESSURE ON WORKERS	52
DEATHS AT THE PORT	55
SECTION 6: MOVING FORWARD	58
ENDNOTES	61

EXECUTIVE SUMMARY¹

In 2016 Ports of Auckland launched an automation programme which it claimed would double the port's capacity, promising Aucklanders, customers and shareholders safety, environmental, community and capacity benefits from the automation of their container terminal. But the automation project failed on every measure.

Instead of improving throughput, and even after accounting for disruptions caused by COVID, the automation project led to severe congestion, delays and additional costs for the port and its users. Workers were put under pressure to make up the shortfall, jeopardising safety with a with lives lost and a tripling of injuries and lives lost.

New analysis has found that Ports of Auckland's automation programme has cost the port and wider New Zealand economy over NZD\$1.2 billion – equivalent to 17 years of port profits prior to the terminal's automation.²

In 2016, Ports of Auckland Limited (POAL) was recognised as the best seaport in Oceania. There were reasons to celebrate – productivity was growing, profits were rising, and owner Auckland Council was collecting healthy dividends on behalf of their community.

Within six years, with the implementation of POAL's automation project, all that changed. The World Bank's Container Port Performance study resulted in Ports of Auckland receiving the unenviable moniker of the 'worst container port in Oceania' in 2022 in response to suffocating port congestion and collapsing productivity.

POAL had pursued the automation of its straddle carriers with the aim of lifting its throughput, within its existing limited footprint. The port expected a doubling of its throughput without disrupting its current operations – a 'world first' automation of a functioning port. POAL's commitments went beyond capacity. The port's then-CEO, Tony Gibson, also promised that automation would deliver "safety, environmental [and] community benefits". POAL's plan overestimated benefits and was not fully appreciative of the potential costs of the project, warned the Maritime Union of New Zealand (MUNZ) and the International Transport Workers' Federation (ITF).



“IT WAS NOT SAFE. THE SOFTWARE PROGRAMMING WAS SUCH THAT THE STRADDLE CARRIERS ... WENT OFF AND DID THEIR OWN THING ... WHICH WAS LIFE-THREATENING, AND PROPERTY-THREATENING.”

PHIL GOFF, MAYOR OF AUCKLAND COUNCIL (THE PORT'S OWNER)

Management were cautioned that automated carriers deliver *lower* productivity compared to an engaged workforce operating manual carriers. International evidence on this is clear and was presented to POAL.

Management's failure to listen to their workforce was heavily criticised in an independent report requested by the port's owner, Auckland Council, into the failed automation project (the 'Binns Report').

Throughout the rollout of the project, numerous "software glitches" and several major crashes plagued the automated straddles. Questions raised by the port's owners, media, and the union about the risks posed by errant carriers posed to workers' lives and customers' property, led to the repeated suspension of the automated straddle carriers.

Congestion at the port worsened, first as infrastructure was built and tested, and then as automated straddles failed to move containers reliably and fast enough. Shipping lines diverted and put congestion charges on the port.

The failure of the automated yard in turn put more work on the manual yard, which also became congested. Management responded by pushing on with the automation programme and demanding more productivity from the manual straddles to cover the shortfall. Safety incidents increased, and the terminal saw the deaths of three stevedores in four years and a significant rise in injuries. A judge specifically attributed blame to POAL management for pushing workers to go faster after one of the deaths.

In 2022, after years of project delays and falling performance, a freshly installed POAL board declared an end to the port's automation programme stating: "The project is experiencing continuing delays to full terminal roll out, the system is not performing to expectations, and we do not have confidence in the projected timeline or cost to completion". Its new CEO declared: "The challenge that we had with the automation project was the stability of the software and their ability to run at the speed we needed them to."

“THERE WAS A SYSTEMATIC FAILURE TO INSTIL A CULTURE OF SAFETY AND COMPLIANCE ... THE HAZARD WAS OBVIOUS.”

JUSTICE EVANGELOS THOMAS SENTENCING FOLLOWING THE FIRST OF WHAT WOULD BECOME THREE WORKPLACE DEATHS (2020)

“WAITING TIMES FOR BERTHING, LABOUR SHORTAGES AND SLOW PRODUCTIVITY ... DELAYS WERE IMPOSING SIGNIFICANT COSTS ...”

JAN-HENRIK HINTZ, PACIFICA SHIPPING (2020)

However, even as POAL's automation experiment came to an end, costs continued to mount.

The port revealed that \$65 million in software and guidance systems had been written off to date, and it has been estimated by industry experts that total direct financial costs may reach \$400 million for the port company from the failed project.

But the costs are wider than those borne by POAL. Owner Auckland Council has, so far, forgone over \$160 million in dividends, contributing to a budget hole that could have consequences for Auckland Council's public services going forward.

The project affected port customers beyond delays, with customers paying out around \$150 million to shipping lines in congestion charges, and many were also charged congestion fees by trucking companies to cover the cost of their idle trucks.

Other ports, rail lines, and inland ports became congested as cargo diverted around the bottleneck that emerged in Auckland. This had ramifications for business, communities, and carbon emissions. Notably, other New Zealand ports affected by COVID-related supply chain disruption did not have problems on the scale that Auckland did during this period – automation was the distinctive factor.

New analysis by Professor Timothy Hazledine commissioned for this report estimates the total cost to the port and the wider New Zealand economy at \$1.2 billion.

Auckland is now attempting to turn the page and rebuild its reputation as a leading port in the Asia-Pacific region. It is encouraging that POAL's new management has made rebuilding its relationship with employees and their union a priority. Notably, a new collective agreement has been negotiated in recent months, aiming to lift productivity while also ensuring more sustainable workloads and safer hours for port workers than has been seen at times in recent years.

“AFTER [THE DEATHS OF] LABOOM AND AMO, PEOPLE CAN SEE IT'S NOT A GOOD AREA TO GO WORK IN. ESPECIALLY AFTER AMO'S PASSING, THE MORALE WENT REALLY, REALLY LOW. IT WAS SHOCKING. THAT SORT OF TRAUMA THAT'S IN THE BACK OF OUR MATES', OUR MEMBERS' MINDS. IT'S HARD, BECAUSE IT'S ALWAYS THERE. THAT IS FOREVER FOR THEM.”

GRANT WILLIAMS, STEVEDORE (2022)

COUNTING THE WIDER COSTS OF AUTOMATION

DIRECT FINANCIAL COSTS TO THE PORTS OF AUCKLAND

- NZD \$65 million written off (to date) for automation software and guidance systems.
- As much as \$400m spent by POAL on the failed project, industry experts estimate.

LOWER PRODUCTIVITY AND MARKET SHARE FOR THE PORTS OF AUCKLAND

- Throughput of containers down 17%.
- During project, up to 30% of capacity lost due to automation infrastructure work.
- Through 2020-2022, automated yard was usually below 50% capacity and as low as 30%, while the manual yard was usually near or over 100% capacity.
- By 2021, the crane rate was down 30% on 2018.
- Share of New Zealand seaborne trade dropped to 27%, from a third in 2018.

FORGONE DIVIDENDS TO OWNER AUCKLAND COUNCIL

- Dividends fell from an average of \$50m a year to an average of \$10m a year.
- Dividends lost so far total approximately \$160m.

REPUTATIONAL TO THE PORTS OF AUCKLAND

- Lost its status as a leading port, going from being awarded best seaport in Oceania in 2016-18;
 - to being ranked 351st out of 370 ports globally in 2020;
 - to the World Bank ranking it worst in Oceania in 2022.
- Businesses lost trust in the port as delays and costs mounted. Auckland was cut from shipping services and lost its position as New Zealand's highest volume port
- Deaths of three workers and wider concerns over disregard for worker safety and worker treatment harmed the port's reputation amongst Auckland's leaders, central government and in the community.
- Worker deaths and increased pressure on manual operators damaged the port's ability to recruit, at a time when the port was already 50-80 workers short.

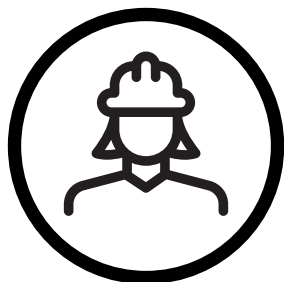
WIDER ECONOMIC COST TO NEW ZEALAND

- \$1.2b in lost value to the New Zealand economy due to shipping delays.
- Economic cost equivalent to 17 years of POAL's average profits before the automation project began.
- Hurt New Zealand exporters' ability to deliver goods to overseas markets as other ports lost international ship visits.

PROMISES VS REALITY

IN 2015, PORTS OF AUCKLAND CEO TONY GIBSON PROMISED AUCKLANDERS THAT AUTOMATION WOULD DELIVER “SAFETY, ENVIRONMENTAL, COMMUNITY AND CAPACITY BENEFITS.” BUT WHAT ARE THE FACTS?³

SAFETY PROMISE



REALITY

Health and safety worsened as a result of the automation project:

- Malfunctioning equipment threatened workers' welfare and their lives on a daily basis. Workers were fearful to be in nearby the automated carriers when they were operational, due to safety concerns. Property was also put at risk.
- When the automated plant or software failed and throughput dropped, workers in the manual yard came under increasing pressure from management to make up for the shortfall, contributing to a rise in accidents.
- Deaths at the port have been attributed to POAL management's push workers for workers to go faster, with courts highly critical of a controversial bonus system that rewarded speed regardless of risks undertaken to achieve high volumes.
- Workers and their families were put under significant mental stress, first at the prospect of the port's job losses intended resulting from the new technology, and then by the pressure management exerted to work faster. Physical fatigue became a major factor.
- After steadily declining in the years preceding the project, the port's number of injuries requiring time off work (lost time) tripled from 2018 to 2021.

ENVIRONMENT PROMISE



REALITY

Emissions and localised air pollution probably grew as a result of the automation project because:

- POAL missed the opportunity to replace the existing diesel-powered manual straddle carriers with electrified automated carriers. This choice failed to maximise emissions reductions.
- The project's negative impact on port throughput led to congestion. Trains, ships and hundreds of trucks were delayed daily on a regular basis, forcing these emission-producing vehicles to sit idle while waiting for available slots at the port.
- Cargo unable to enter or exit New Zealand via the Ports of Auckland was diverted to other ports, creating hundreds of kilometres of additional road/rail transport for each container, with further ramifications for climate emissions.

Although POAL's annual report cites falling emissions (due to moving fewer containers on the port and greater use of renewable electricity), this figure appears not to factor in emissions generated by the project's knock-on effects (e.g.: ships sitting at anchor waiting for berths; road freight trucks idling amidst congestion at the port and inland ports' approaches; nor the additional carbon required by diverted goods).

AUCKLANDERS WERE PROMISED THAT AUTOMATION WOULD INCREASE ANNUAL CONTAINER THROUGHPUT CAPACITY FROM 900,000 TEU TO 1.6-1.7M TEU

COMMUNITY PROMISE

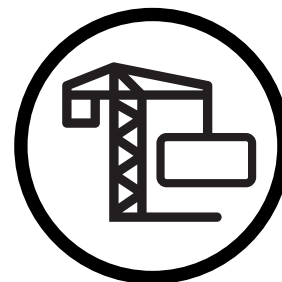


REALITY

The community (workers and their families, other ports, importers/ exporters) all suffered because of the failed automation project:

- New Zealand businesses had to pay more to shipping lines and trucking companies due to congestion, with \$50/container charges introduced by trucking companies to cover the costs of their idle vehicles.
- Congestion charges imposed on containers costing \$150m.
- Ship visit omissions and delays harmed exporters' ability to deliver goods to market as regional ports lost international ship visits – independent analysis estimates it at \$1.2b.
- \$160m dividends forgone to the people of Auckland via port sole shareholder Auckland Council.

CAPACITY PROMISE



REALITY

Throughput at the port fell year-on-year as the project continued:

- Throughput of containers at the port by fell almost 17% between 2018 and 2022.⁴

Financial Year (ending 30 June)	Container movements (TEU)	Change
2018	973,722	
2019	939,680	-3.50%
2020	880,781	-6.27%
2021	818,238	-7.10%
2022	811,565	-0.82%
2018-2022		-16.65%

- Ship calls fell 37% during the same time period.⁵

Financial Year (ending 30 June)	Ship calls	Change
2018	1,492	
2019	1,381	-7.44%
2020	1,271	-7.97%
2021	975	-23.29%
2022	945	-3.08%
2018-2022		-36.66%

LESSONS AND RECOMMENDATIONS

LESSONS OUT OF AUCKLAND

BEWARE THE HYPE

POAL management, too distant from day-to-day operations, drastically underestimated the complexity of wharf side operations and were too ready to believe that automation was up to the task.

POAL management attempted automation based on projections they should have known were overly optimistic and downplayed risks of failure, which were particularly high given this was a conversion of a working port. Signs of failure during testing were glossed over and management continued to hype the project even as safety incidents occurred.

Auckland is an example of a comprehensive failure of an automation project, but it is not alone in undertaking automation programmes that failed to live up to exaggerated expectations. Port owners should be wary about 'believing the hype'.

This is the latest piece of research adding to a body of international evidence questioning the productivity gains and cost savings achieved through automation.

Similar to the productivity impacts measured in other studies, this research shows that in Auckland automated straddles performed slower and promised cost savings did materialise.

HEALTH AND SAFETY MUST COME FIRST

It is evident that health and safety became a secondary priority for POAL management while they pressed ahead with the automation project. The failures of automation, in turn, put more pressure on workers, and safety was sacrificed for speed.

The three worker deaths that occurred at the port during the automation programme were not directly caused by automated machinery but had their roots in management decisions that put safety second and prioritised the automation project above all. The lax approach to health and safety has seen POAL convicted on charges related to one worker's death, charged in relation to a second, with a third being investigated.

Those worker deaths have, rightly, tarnished the reputation of the port and those who oversaw it. The trauma inflicted on the port's workers and their families and communities, and the damage done to POAL as a business will take a long time to heal.

“AUTOMATED PORTS ARE GENERALLY NOT MORE PRODUCTIVE THAN THEIR CONVENTIONAL COUNTERPARTS... HIGH HANDLING COSTS ALSO MAKE THE CASE FOR AUTOMATION NOT ENTIRELY CONVINCING...”

INTERNATIONAL TRANSPORT FORUM (2021)



Photo: John Chapman / Alamy Stock Photo

“[INDUSTRY] EXPECTATIONS [OF AUTOMATION] GENERALLY AREN'T REALIZED, ESPECIALLY IN FULLY AUTOMATED PROJECTS ... PRODUCTIVITY ACTUALLY FALLS BY 7 TO 15%”

MCKINSEY & COMPANY (2018)

NEGOTIATION BETWEEN MANAGEMENT AND UNIONS IS CRUCIAL IN ANY PORT CHANGE

Port workers support improving productivity, but they could see from the start that the overly ambitious automation project was doomed to fail. MUNZ had warned POAL management from the start that automation was not going to be viable. The workers know how hard container movements at pace are, and the risks and dangers of getting it wrong.

The views of the former leaders of POAL about the union are well-known. The automation project followed a bitter labour dispute in 2012 following POAL's move to contract out stevedoring work, removing workers' guaranteed rosters and replace the unionised workforce with casual workers. Workers were unsurprisingly suspicious that automation was an attempt to do what the 2012 dispute had failed to do: reduce employment levels, cut wages and conditions and banish the union.

The fraught relationship between management and the unions meant that management didn't listen to the concerns of workers. In fact, they barely consulted workers who understand the practical needs of a container terminal. We can learn that without a functional relationship with a port's workforce, built on mutual respect and trust, management are prone to making poor choices time and again.

The Binns Report puts particular emphasis on the failure to engage the expertise of workers in the project.

If they had, they might not have gambled on a 'world first' automation project at all, nor have continued to double down on it, as it failed.

COSTS OF AUTOMATION GO FURTHER THAN CAPITAL PURCHASES

While focusing on the promised benefits of automation, POAL management overlooked and downplayed costs and risks. The capital cost of the POAL automation project, at up to \$400 million, was very significant, but it only scratched the surface of the costs to both the port and New Zealand as a whole.

The disruption caused by the automation programme slashed productivity and led to congestion, reducing revenue for the port while increasing operating costs. The Auckland community has been and continues to bear that cost through foregone dividends, and the potential consequences for council services going forward.

The failure of automation led to shipping lines imposing congestion charges on the port's customers. Ship delays and visit omissions cost customers a billion dollars in value, while also congesting other ports and the land transport network.

The Port lost skilled workers it could not replace as automation faltered. The drive to get more work out of the remaining workforce exacted a terrible cost in lives and injuries.

POAL lost its status as New Zealand's premier port, has struggled to attract new workers, and has become a political punching bag. The CEO and chair who championed automation have quit and the new management is focused on "restoring our mana" (*a te reo* Māori word meaning 'prestige, pride, status').

RECOMMENDATIONS

FOR PORT OPERATORS

01. CONDUCT COMPREHENSIVE RISK AND IMPACT ASSESSMENTS WHEN CONSIDERING THE DEPLOYMENT OF NEW TECHNOLOGIES.

Such assessments should:

- Cover the worksite, the port as a whole, and potential social, economic and environmental impacts to the port's hinterland.
- Involve the workers and their union representatives.
- Take account of potential technology impacts on labour, occupational health and safety, privacy, cybersecurity, equalities and discrimination (including with regard to gender, age and race), productivity and performance within the worksite and port assessments.

02. CONDUCT A RIGOROUS, TRANSPARENT AND PUBLIC REVIEW BEFORE GREEN LIGHTING THE DEPLOYMENT OF NEW TECHNOLOGIES.

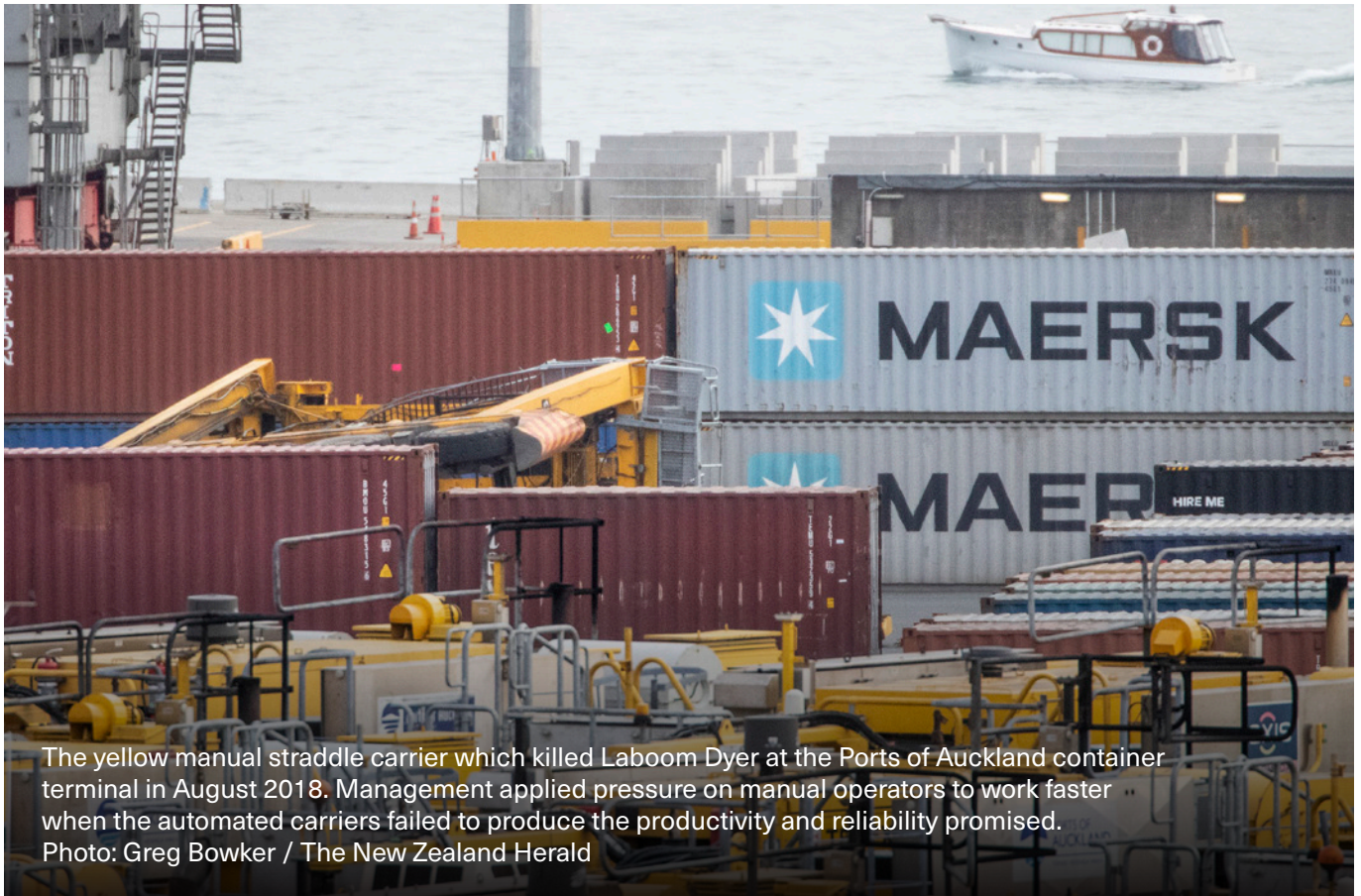
This should:

- Involve a full review of risks identified in the assessments, with details of whether and how such risks can be managed.
- Provide unions and other stakeholders the opportunity to fully consider and provide feedback on the proposed deployment, and have a say in whether the project goes ahead and, if so, any conditions which should attach to it.

03. NEGOTIATE WITH UNIONS BEFORE DEPLOYING NEW TECHNOLOGIES.

Negotiations should cover:

- Provisions on health and safety, including how workers can flag safety risks. This is crucial as workers are key to identifying safety issues early on and keeping operations truly safe.
- Financial and other compensation for any port workers affected by job losses or detrimental changes to their roles.
- Changes in work and shift patterns with the aim of preserving jobs.
- The use of any digital technologies affecting productivity, pay, performance, training, recruitment, site security and worker safety (including cybersecurity).



04. WHERE NEW TECHNOLOGIES ARE DEPLOYED UPDATE IMPACT ASSESSMENTS

Such updates should:

- Be used to identify and resolve unanticipated problems affecting safety, security, jobs and other issues.
- Be published, along with details of how any issues will be managed.

FOR GOVERNMENTS AND REGULATORS

05. SAFEGUARD WORKERS' RIGHTS.

They should:

- Recognise and address the risk that automation may have adverse impacts on workers, including with regard to safety and privacy.
- Protect worker rights, including freedoms of assembly and association, and ensure that trade unions are able to represent worker positions and negotiate both before and during the deployment of new technology.

06. EMPOWER PUBLIC AUTHORITY OVERSIGHT BODIES TO OVERSEE THE CONSIDERATION AND DEPLOYMENT OF NEW TECHNOLOGIES AT PORTS.

Such bodies must:

- Have the powers to block or suspend deployments which jeopardise safety and cause socio-economic harms.
- Where deployment goes ahead, monitor progress, intervening as necessary to protect workers and the wider community.

07. REQUIRE COMPREHENSIVE RISK AND IMPACT ASSESSMENTS TO BE CARRIED OUT BEFORE ANY DEPLOYMENT OF NEW TECHNOLOGIES.

Such assessments should:

- Cover the worksite, the port as a whole, and potential social, economic and environmental impacts to the port's hinterland.
- Take account of technology impacts on labour, occupational health and safety, privacy, cybersecurity, equalities and discrimination (including with regard to gender, age and race), productivity and performance within the worksite and port assessments.
- Where deployment goes ahead, be updated at regular intervals to flag unexpected issues, including with regard to safety and security.

08. REQUIRE A RIGOROUS, TRANSPARENT AND PUBLIC REVIEW TO BE CARRIED OUT BEFORE THE DEPLOYMENT OF NEW TECHNOLOGY IS GIVEN THE GREEN LIGHT.

This should:

- Involve a full review of risks identified in the assessments, with details of whether and how such risks can be managed.
- Provide time and space for unions and stakeholders to consider and provide feedback on the proposed deployment, and have a say in whether the project goes ahead and any conditions which should attach to it.

FOR UNIONS

09. ACTIVELY ENGAGE AS NEW TECHNOLOGIES ARE CONSIDERED AND DEPLOYED.

This should involve:

- Bargaining for negotiation rights over the introduction and deployment of new technologies.
- Reviewing plans for proposed deployments.
- Engaging in assessments and reviews for planned deployments, identifying potential risks and any opportunities for workers.

10. EDUCATE MEMBERS ABOUT NEW TECHNOLOGIES.

This should involve:

- Engaging in workplace education for members, delegates and their communities on the potential impact of new technologies, including those featured in automated and semi-automated terminal operations.
- Make accessible resources available to members to keep them informed of the issues, such as lunchroom leaflets, online quizzes, and technology updates.

FOR OWNERS AND INVESTORS

11. INTERROGATE THE BUSINESS CASE FOR AUTOMATION.

They should:

- Critically review the business case for automation, including any independent analysis of reputational risks due to environmental and social impacts.
- Ensure any risk and impact assessments commissioned analyse how proposed cost-saving automation plans will impact on environmental, social and governance commitments, including labour rights.
- Engage with a wide range of stakeholders, including unions and local communities at an early stage in the decision-making process before green-lighting large scale projects.

TIMELINE OF MAJOR EVENTS

This report deals with the automation project through several prisms: the automation programme itself, the impact on the port, the impact on New Zealand, and the impact on the workers. This involves recanvassing overlapping time periods. To assist with clarity, it is useful to lay out key events in chronological order.

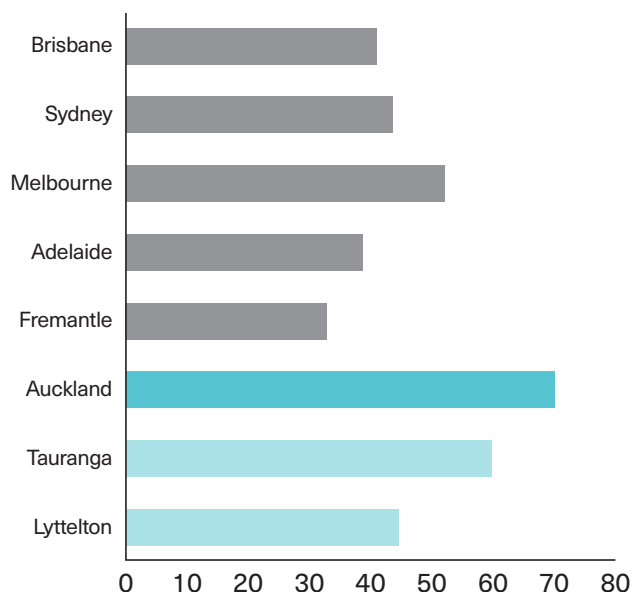
December 2011 – April 2012	Strikes and lockouts result from attempt to de-unionise the port and bring in “competitive stevedoring”
June 2015	Resource consent to reclaim more land for the port is revoked
August 2015	POAL management launches first consultation on automation of the container terminal
June 2016	POAL awarded Best Seaport in Oceania (it will win again in 2017 and 2018)
June 2016	POAL pays a record dividend of \$54.3m
August 2016	POAL management announces decision to automate the container terminal by 2019
2018	First automated straddle carriers delivered, testing area created and testing begins. Automation infrastructure work reduces port capacity, causing congestion
Year to June 2018	Port of Auckland handles a record 973,722 TEU
August 2018	Laboom Dyer is killed when his manual straddle carriers topples over while moving too fast
November 2018	Trucking companies begin imposing congestion charges on the Port.
2019	Infrastructure and testing area for automated straddles are established, with the terminal sectioned into automated and manual yards. Automation “Go live” date is delayed until 2020 to avoid a repeat of 18/19 peak congestion
March 2020	COVID border closure. The port remains operational but movement of people across borders is more difficult
June – September 2020	POAL announces automation project is ‘live’. First ships serviced by automated straddles in September

August 2020	Pala'amo Kalati is killed when a container falls on him. Owner Auckland Council demands independent health and safety review
November 2020	Use of automated straddles is suspended due to software fault
November 2020	Maersk announces congestion charges for the port, quickly followed by other shipping lines
November 2020	Use of automated straddles is suspended again after crash in which automated straddle falls over
December 2020	Competitor Port of Tauranga reports 21% higher container exchanges "due to the cargo bypassing Auckland"
March 2021	Port of Auckland "structurally removed" from Hapag-Lloyd, Maersk, Hamburg Süd and MSC joint Oceania-US East Coast service "to safeguard schedule reliability"
March 2021	CHASNZ' independent health and safety review finds no robust safety case for automated straddles
June 2021	Automated straddles suspended permanently following another crash due to software issues. Set to restart March 2022
June 2021	POAL pays dividend of \$3.7m – its lowest in more than a decade
June 2021	POAL CEO Tony Gibson, champion of the automation project, resigns
December 2021	Workers' mandated weekly hours reduced from 60 hours to 48
April 2022	Atiroa Tuaiti dies after falling from a height on a docked container ship
May 2022	World Bank ranks the Auckland worst container port in Oceania
June 2022	Maersk increases congestion charges for port users
June 2022	Container throughput is 811,565 TEU for the year
June 2022	POAL announces cancellation of the automation project, writing off \$65m in software and infrastructure
June 2022	Auckland Mayor Phil Goff calls for an independent review of the project's failure
July 2022	At the Mayor's request, the POAL board commissions independent review of the abandoned automation project by independent infrastructure expert Mark Binns
September 2022	Binns Report is published by POAL board, criticising numerous aspects of the automation project and POAL management
December 2022	New collective agreement signed by POAL and MUNZ, creating salaried incomes and improved health and safety measures

SECTION 1: WHY AUTOMATION WAS ATTEMPTED

Benchmarking the labour rate in Australia and New Zealand

Average container movements per hour, calendar year 2013



Source: Ministry of Transport, BITRE, NZIER.⁷

AUCKLAND WAS A LEADING PORT PRIOR TO AUTOMATION

Prior to the push for automation, Auckland was a stand-out example of a productive port. Container movements per labour hour had grown from 55 in 2009 to 80 in 2014 – the best labour rate performance of New Zealand’s container ports and well ahead of the five largest ports in Australia.⁶

In June 2016, the Ports of Auckland was recognised as the ‘Best Seaport in Oceania’ at the Asian Freight, Logistics and Supply Chain Awards,⁸ a title it would retain in 2017 and 2018.

Management was imbued with a confident spirit as CEO Tony Gibson announced the port would overcome its biggest challenge of limited space along Auckland’s prized waterfront, not by expanding into the harbour or buying more land, but instead by adopting new technologies on the existing site footprint. By replacing its manual straddle carriers with automated ones, Ports of Auckland management expected to achieve a doubling of its throughput.⁹



ABOUT THE PORT

Ports of Auckland Limited (POAL) is the company which manages the ports in Aotearoa–New Zealand’s largest city. POAL operates two seaports alongside the city’s Waitematā and Manukau harbours, and POAL also runs four inland port operations.

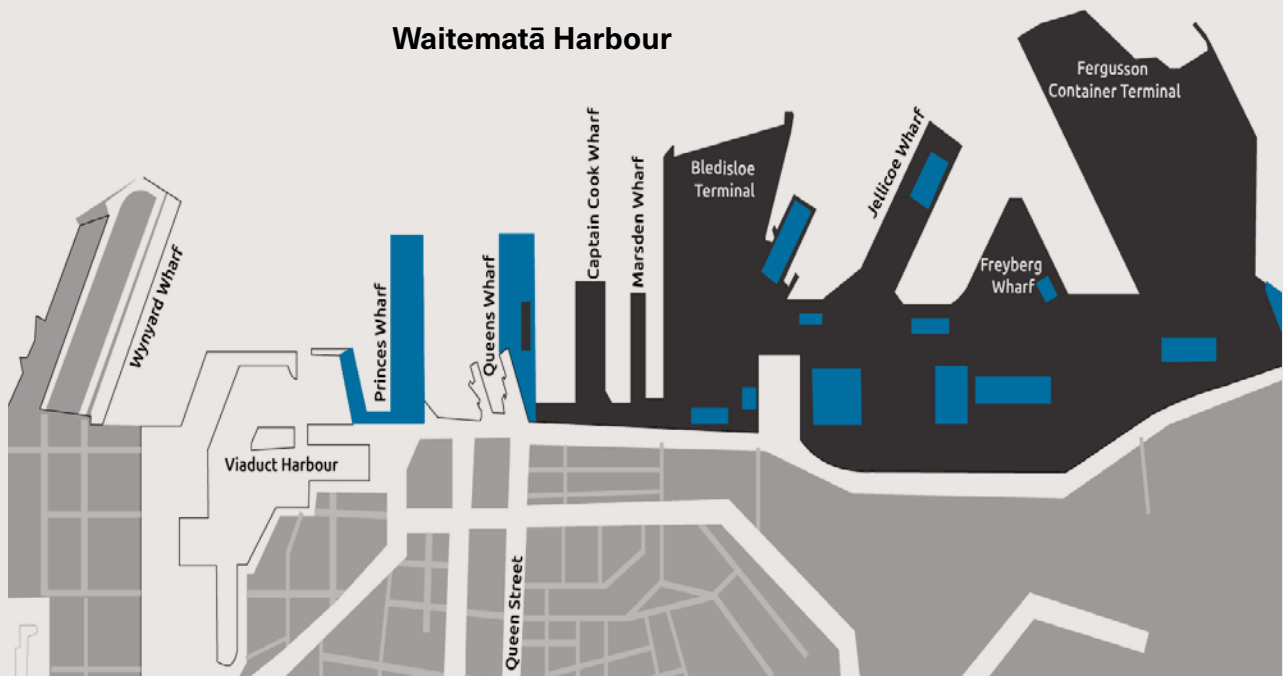
It is New Zealand’s largest import port, principally receiving containerised goods, as well as vehicles and breakbulk goods. It also services international cruise vessels and local ferries. Containers are handled at the Fergusson Container Terminal (the ‘terminal’), with vehicle imports and other goods handled at the adjacent terminals and wharves.

POAL’s main seaport (the ‘port’) sits along the south bank of the Waitematā Harbour, in the heart of Auckland’s central business district.

While historically the port has expanded its physical footprint to grow volume capacity, this approach is restricted in modern times given the strong competition for the highly valuable land that the port and its neighbouring properties sit atop.

Unsurprisingly, the port’s location has long been the subject of public debate with proposals to shift its throughput to regional ports in Whangārei and Tauranga, and even to shift the port in its entirety to new, deep-water locations.

In 2012 the *Upper North Island Ports Study*, commissioned by the relevant city and district councils found there was enough spare capacity in the three main ports to cope with forecast demand over the next 30 years.¹⁰





THE DECISION TO PURSUE AUTOMATION

Following the appointment of Tony Gibson as CEO in 2011, POAL began to look for ways to increase port throughput and lift productivity even faster than the climb it had been achieving. Breaking the strength of the unionised workforce was part of that agenda.

A bitter 2012 strike and lockout dispute centred on POAL's move to contract out stevedoring work on the wharves, remove workers' guaranteed rosters, and replace the unionised workforce with casualised workers.¹¹ POAL called this "competitive stevedoring", arguing it would reduce labour costs. Non-union workers would have worked for lower pay and with worse conditions than previously unionised stevedores.

The strike and lockout gained national media coverage and placed POAL firmly in the public gaze. MUNZ has explained the reprehensible

tactics used by management, including an anti-worker blogger obtaining and publishing the confidential data of an employee's leave records.¹² This worker had taken time off to care for his terminally ill wife. MUNZ was supported by the ITF during this dispute. Eventually, under pressure from elected officials and business, the latter paying strike surcharges from Maersk Line, and with the matter set to appear before the Employment Court, POAL agreed to suspend its attempt to de-unionise stevedoring at the port.¹³

In the meantime, however, a company union, PortPro, had been established and a new collective agreement negotiated that undermined prior work conditions.¹⁴ PortPro would eventually cease to operate and most of its members joined MUNZ. The PortPro collective agreement was replaced by a collective agreement with MUNZ, signed in 2015, just months before the automation programme began.¹⁵



Port CEO Tony Gibson promised automation would bring safety, environmental and capacity benefits. Photo: POAL

During the same period, POAL was facing barriers to its plan to expand the footprint of the port by reclaiming more land in Waitematā Harbour. Its plans for reclamation were progressively downscaled in the face of public opposition,¹⁶ and then combined with plans to increase container stack heights from three to four. Expansion plans were shelved in 2015, after POAL lost a court case considering resource consent for the Bledisloe wharf expansion.¹⁷

With the failure to de-unionise the workforce through restructuring and physical expansion of the port blocked, management looked to automation to allow it to both reduce its stevedoring workforce, picking and choosing who it kept, while increasing throughput.

The cost and disruption involved in automation of a working port might be expected to reflect major efficiency challenges. One would expect to see such challenges identified upfront and options considered to address these. Evidence suggests this was not the case.

MANAGEMENT OBJECTIVES

In 2015, Ports of Auckland CEO Tony Gibson announced consultation would take place on an automation plan, stating: “We need more room. We can’t go out, so we need to go up, and for that automation looks the best bet”. POAL said the automation programme would nearly double the port’s capacity from 900,000 TEU to 1.6-1.7m TEU, while reducing the stevedore workforce by 50.¹⁸

This decision, following closely on defeat in the 2012 dispute and limitations to the port’s footprint expansion, had technical and power dimensions. The expansion of port productivity was now inextricably linked with a management view that the union’s presence was unnecessary for, and a threat to, company performance and management authority. Automation could never be simply a technical development in POAL. It was also an opportunity to exert managerial power, similar to management priorities during the era of containerisation.

“PORTS OF AUCKLAND IS THE FIRST OPERATING PORT IN THE WORLD TO AUTOMATE.”

POAL ANNUAL REPORT 2020.²²

Management planned to procure 27 automated ‘1-over-3’ straddle carriers from Terex Port Solutions (now Konecranes) that would stack containers up to four high, compared to the three high of the existing manual straddles, 21 of which would be upgraded. It was expected that this would result in a 30% increase in container terminal capacity without the need for new reclamation, while increased speed would boost throughput. The automated straddles would be used for loading and unloading trucks and moving containers around the Terminal while “the more complex operations under the carriers would continue to be performed by manual straddles”.¹⁹

POAL’s Gibson claimed the automated straddles would deliver numerous benefits: “They are inherently safer, as there is no human on board; they deliver a positive environmental impact as they will consume up to 10% less fuel and produce lower emissions; they will be quieter and need less light on the terminal, reducing both noise and light pollution. Overall, automation offers us safety, environmental, community and capacity benefits.”²⁰

The experience at the Ports of Auckland is of particular note because it involved an attempt to automate a functioning port using automated straddle carriers, which POAL management claimed was a world-first. The majority of automated terminals are greenfield developments. There are few instances of manual terminals being automated. This reflects multiple considerations, including costs, disruption impacts, resource integration challenges, and shared experience.

A review of the automation programme in 2022 commissioned by POAL’s Board at the request of Auckland Council (the Binns Report) would find that the “business case presented to the Board for the approval of the Project was unsatisfactory” with a “lack of formal confirmation as to why partial automation was at that point the preferable solution”, and that the board did not fully understand the risks.²¹ Notably, POAL management does not appear to have seriously considered other options to increase productivity or boost the storage capacity of the port’s limited footprint, such as higher manual straddle carriers.

WORKFORCE’S INPUT DISREGARDED

MUNZ disputed POAL’s justification for automation, drawing on international experience and reports provided by the ITF:

“All the research and everything we had found about automation: not one terminal in the world had got quicker. The box rates had got slower... It’s a waste of time. The speed’s not there. None of them are generating the container rates you had with a manually operated system. So, it’s not productive. It’s not quicker. It’s not cheaper.”²³

In 2021, there were around 53 automated or partly automated container terminals worldwide representing around 4% of total global container terminal capacity.²⁴ One important reason for the relatively low uptake of automation is its lacklustre results. Indeed, the OECD’s International



Transport Forum found automation generally fails to have major positive results:

“Automated ports are generally not more productive than their conventional counterparts. Port organisation and specialisation, geographical location and port size are more important determinants of port performance than automation. This explains the limited automation of container ports to date.

Comparatively, high handling costs also make the case for automation not entirely convincing. Although automation of container terminals reduces labour costs, capital costs are higher as automated equipment is more expensive than manually operated equipment....

Finally, it is often assumed that automation improves the safety and health of terminal workers. Whilst automating processes that expose workers to risk is clearly beneficial, there is so far little robust empirical data to demonstrate significant overall improvement in outcomes in practice.”²⁵

Automation is not a panacea. International studies show that while automation is almost always billed as cheaper and faster, the projects often produce operational slow-downs, with any labour cost savings barely matching the value lost to decreased productivity. For example, a study by McKinsey found that industry:

*“[Expects] automation to cut operating expenses by 25 to 55 percent and to raise productivity by 10 to 35 percent, in line with our estimates of what might be possible. But today **these expectations generally aren’t realized**, especially in fully automated projects. Our survey indicates that operating expenses at automated ports do indeed fall, but only by 15 to 35 percent. **Worse, productivity actually falls, by 7 to 15 percent.**”²⁶*

MUNZ also disputed the efficiency arguments for automation. MUNZ noted that manual straddle carriers are available capable of stacking ‘1-over-3’, suggesting that there existed other potential solutions to the putative performance problems exercising management. This, and other aspects of the

rationale for automation offered by POAL, convinced MUNZ that management's quest for automation in the port was flawed in both strategic and operational terms.

The union saw automation primarily as a continuation of efforts to undermine organised labour on the port, including a move to reduce in size the organised workforce. Indeed, POAL management conceded that automation "would have an impact on jobs. Up to 50 jobs could be lost" but "has the potential to deliver capacity, cost and environmental benefits".²⁷

The exclusion of MUNZ from any strategic discussion of the automation strategy prevented union insights and knowledge from being considered. The Binns Report makes a similar point about flawed strategic vision and information.

The absence of MUNZ' involvement in decision-making was reinforced in 2016, when a second round of consultation was undertaken following the results of the first consultation and a scoping report.²⁸ MUNZ is clear that, again, there was no genuine consultation took place, instead just two briefings given by management on what was going to happen. MUNZ understood that they were dealing with a decision already made.²⁹

In this context it is not surprising that the final decision to proceed to automation was taken in April 2016. By August, POAL management had announced the decision to the world.³⁰

Given this decision, it is worth noting POAL's recognition of the challenge ahead. POAL management admitted that, in attempting to automate a working wharf in stages, they were undertaking a unique task. POAL's public statements made much of this "world first". The 2016 Annual Review confidently proclaimed:

"We have now agreed to partially automate our container terminal, the first New Zealand port to do so and the first worldwide to take this particular approach. We will maintain manual operation under our



One of the many mugs produced by POAL in anticipation of success from their automation programme.

*cranes in order to keep our productivity high but will automate the yard and truck operations to deliver greater efficiency, more capacity and lower costs. When fully implemented in 2019 automation will give us a significant strategic advantage."*³¹

It is also worth noting Auckland Mayor Phil Goff's recollection of the decision and his own scepticism:

"When [Gibson] proudly said to me, 'we're at the cutting edge of technology' – I said, 'I'm not sure that's a good place to be, because nobody's been there before. And you're not sure whether you're going to get it right.'" ³²

Despite these issues, automation continues to be heavily promoted by suppliers. Konecranes, which supplied both manual and automated straddle carriers to POAL, lays out a four step *Path to Port Automation* with the Ports of Auckland example offered to potential clients as a success story, presumably.³³

SECTION 2: THE FAILURE OF AUTOMATION

“HAVING HEART SURGERY WHILE YOU’RE PLAYING TENNIS”

PORTS OF AUCKLAND CEO TONY GIBSON ON
ATTEMPTING AUTOMATION OF A WORKING PORT.³⁴

Gibson’s quote reveals something of POAL senior management’s understanding of the stresses and dangers involved in a real-time automation project. It was a complex challenging project, which the independent Binns Report pillories across multiple facets of its implementation. It suggests that the planning and implementation of automation would require an exemplary arrangement of skills, knowledge, experience and coordination. Instead, the roll-out was a story of unforced errors.

2016-2019: AUCKLAND SHEDS CAPACITY

Initially, the automation project appeared to be going to plan. The new Fergusson North wharf was completed. Three new container cranes were installed, as well as major pavement upgrades to handle the additional weight of the automated straddle carriers. A new truck loading area and new refrigerated container capacity were created.³⁵

In its 2018 Annual Report, POAL stated:

“25 of our 27 new automated straddles have been delivered and assembled

and are being tested on site. Two-thirds of our truck grid has been converted for automated operation, new masts to support the positioning system and lighting have been erected, and we’ve installed 24 kilometres of fibre-optic cabling.”³⁶

However, the difficulties with automating a running port were also beginning to show. In its 2019 Annual Report, POAL attributed falling throughput to automation capital works:

“Port automation is usually done on new ports or terminals, or in areas that are able to be closed. Because we don’t have any spare land, we are automating our terminal while still operating, which naturally results in a loss of capacity ... work on our automation project has been at its peak. In particular, the infrastructure work needed to automate the terminal – digging trenches, renewing pavements and installing cabling and light poles and so on – has reduced terminal capacity and made operating more difficult, especially during the import season. We have lost a significant service as a result and container volumes are down.”³⁷



“THE AUTOMATION SYSTEMS ARE TAKING UP REAL ESTATE... WE’VE HAD CRANES SITTING AT THE END OF THE WHARF FOR THREE YEARS AND BLUE AUTOMATED STRADDLE CARRIERS ‘DOING NOTHING.’”

RUSSEL MAYN, POAL STEVEDORE WITH 40 YEARS’ EXPERIENCE.⁴⁴

This infrastructure work reduced “terminal capacity by about 20%” in 2018, according to POAL.³⁸ Logistics company Henning Harders estimated the impact was even larger: “This large and complex project, which could take up to 12 months to fully optimise, has seen a yard capacity reduction of between 20% to 30%.”³⁹ Note that this decline in throughput was predictable before automation was attempted. All the factors mentioned in the 2019 Annual Report might have been anticipated in pre-commencement assessments.

In 2019, a testing area was established to trial the automated straddles, but they were consistently slower than manual straddles. A video posted on Facebook by POAL in September 2019 to showcase automated straddles in action illustrates how slow they were in comparison to the manual straddles – completing just four container movements in the time that manual straddles completed 12.⁴⁰

This ‘automated yard’ occupied around a third of the Terminal but did not operate at anywhere near the capacity of the ‘manual yard’, and the automated straddles were frequently offline for upgrades to software. At no stage in the project were the 27 automated straddles put to full use. Testing involved only up to six straddles at any one time.⁴¹ According to workers, the automated straddles were in use so infrequently that they had to be moved periodically to prevent the tyres becoming flat.⁴²

By early 2020, POAL conceded that the work was still causing lower productivity at the port: “Upgrading a live terminal is difficult, causing disruption and some loss of capacity during the process.”⁴³

2020-23: SERIOUS INCIDENTS DERAILED AUTOMATION

As noted above, trials of automated straddles did not produce the performance improvements expected of automation by management. Moreover, software issues repeatedly froze the entire fleet. Stevedore Grant Williams, who worked on the automated straddles, recalled:

“There were unprogrammed movements in the machines. Little things, but you bring it up, and the whole testing regime was suspect. That type of testing was insufficient to get any decent assurance of performance. They carried on with it, eye on the prize, chasing the timeline.”

Instead of fixing the issues raised by workers, the Binns Report found: “Vital testing criteria [were] changed (making the passing of the acceptance tests easier). The rationale for changing the acceptance tests could not be identified.”⁴⁵ This underlines the importance of ensuring a proper testing regime for all software and artificial intelligence used in port automation, which takes account of feedback provided by workers.

COVID lockdowns pushed back the programme further and the port struggled to import specialist technicians through New Zealand’s closed international border.⁴⁶

Nevertheless, the first phase of automation beyond testing went ‘live’ in June 2020, with container ships being serviced by September 2020.

In November 2020, an anonymous worker told Radio New Zealand that productivity was falling due to failures of automation including software problems and lack of alignment between the port and the automated carriers providers.

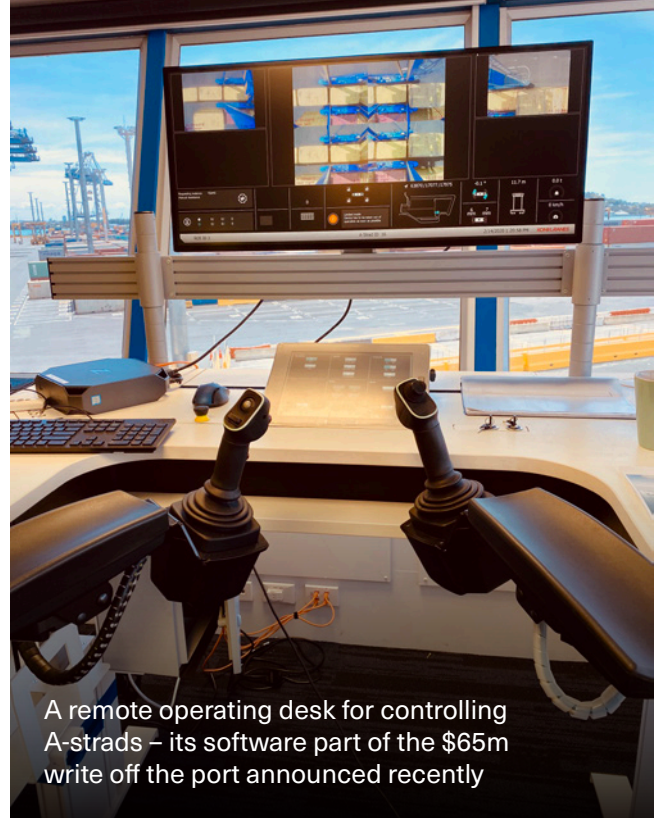
Further problems arose when the wharf was divided into automated and manual sections. This meant that, when the automated carriers stopped working, wharf capacity was seriously reduced.⁴⁷ Truck drivers preferred to use the manual wharf, rather than be stuck waiting for the automated straddles.⁴⁸

This inevitably led to workload pressures, with profound consequences. The pressure was on workers in the manual yard to go faster to compensate for the deficiencies of the automated straddles. Lucrative incentives were offered, to the detriment of health and safety safeguards (see *Impact on Workers*, below). It was an example of inappropriate or poorly implemented technological change leading to increased pressure on a workforce.

Informed observers recognised the contradiction. Customs Brokers and Freight Forwarders Federation CEO Chris Edwards said: “What they’re trying to do is almost impossible in a working environment. They want to test what they’ve got, the automation ... but the port has to carry on working.”⁴⁹

The crisis in implementation grew when serious incidents involving the automated straddles occurred, which saw them taken offline for extended periods:

In early November 2020, the automated straddles were taken offline for an urgent software fix.⁵⁰ In late November 2020, one of the automated straddles became “overloaded” and failed to make a turn, “toppled” over a concrete barrier and crashed into a container before coming to a stop.⁵¹ In March 2021, a health and safety review of the port ordered by Auckland Council after a worker death (see *Impact on Workers*, below) found that “the automation project is unable to make a robust safety case for the development and operation



A remote operating desk for controlling A-strads – its software part of the \$65m write off the port announced recently

of the automated straddles at Fergusson Wharf.”⁵² On 17 June 2021, an automated straddle lost control as a result of a “software fault”⁵³ and smacked the container it was carrying into other containers.⁵⁴

By March 2021, 80 ships had been handled by the automated yard, with a total of around 50,000 containers exchanged in nine months. This figure should be compared with the performance of the port as a whole, which had throughput of about 650,000 containers in this period, implying that over 90% of containers were being handled by the two-thirds of the Terminal devoted to manual operation. However, CEO Tony Gibson said the automated straddles were achieving the same turnaround as manual ones but there were still some “software and productivity glitches.”⁵⁵

In April 2021, public servants reported to government ministers that: “Delays in implementing POAL’s automation programme mean that it is operating a less-than-fully efficient terminal. As New Zealand’s main import port, POAL is usually the first port of call for a significant number of shipping lines, causing downstream delays in the supply chain.”⁵⁶

Poor performance by automated straddles, especially the June 2021 incident, is important in safety terms. While no one was hurt by the automated straddles, and POAL management insisted that there was no danger to anyone, the safety risk created by out-of-control automated straddles was clear. Workers on the manual straddles reported uncontrolled movements of the automated straddles and were afraid to work near them.⁵⁷

PROJECT SUSPENDED

The underlying issue of the June 2021 incident was serious enough to put the whole automation project on hold. Mayor Phil Goff reflected that to the owner, Auckland Council, the project “was not increasing productivity – it was having the reverse effect”.⁵⁸

“It was not safe. The software programming was such that the straddle carriers, on at least two occasions, went off and did their own thing, and not what they were programmed to do, which was life-threatening, and property-threatening.”⁵⁹

With the automated straddles offline, their operation was reviewed. In July 2021 a new project timeline launched by management, with the self-set deadline for completion pushed out to March 2022.

Even the March 2022 date was not a certainty, with the port struggling to balance the now-evidently problematic technology with the ire of unhappy customers beset by delays and charges. POAL's diminishing confidence in the project was evident. It issued a cautionary statement that:

“This timing could impact existing import volume demand and the peak export season, potentially causing further supply chain disruption. For this reason, we won't give a go-live date until later in the project. If we feel that going live in March would jeopardise imports or the 2022 export season, we will delay it.”⁶⁰

Officials reported on the updated plan to government ministers in Wellington: “Following a software fault in its automation programme, POAL has decided to reconfigure its operations – it will expand manual operations at its container terminal and operate a reduced automated area for testing and system optimisation.”⁶¹ ... “Stage 2 will involve expanding the test area to include targeted container moves, and Stage 3 will expand automation to the terminal's entire northern berth. A fixed date has not been set for Stage 4 ('go-live' or full automation), but the project review found late March 2022 to be realistic and achievable.”⁶²

END GAME

In its 2022 Interim Report, published in February, POAL stated “We started stage two of testing in mid-January, which involved an expansion of the test area and testing the system with a wider range of automated tasks.”⁶³ But the March 2022 deadline for full automation was illusory. In 2021, key champions of the automation project, Board Chair Liz Coutts and CEO Tony Gibson, resigned. In June 2022, a new POAL board, with a new CEO, announced that the automation project would end.⁶⁴ Only 120 ships had been serviced by the automated straddles in two years of operation.⁶⁵ The project had failed.

The new governance regime proactively moved to cauterise the wound, bringing in the highly experienced Mark Binns to review the automation strategy from a management perspective. His report reveals an array of missteps and failures in the inception and management of the project.⁶⁶ The Binns Report was made public, as new management distanced itself from the automation decisions.

It should be noted that Coutts⁶⁷ and Gibson⁶⁸ have both publicly criticised the Binns Report and remain adamant that the automation project could have succeeded but was hampered by COVID and the attitude of workers. The Binns Report notes several



former board members expressed similar sentiments. However, the Binns Report attributes the failure squarely to management and governance failures leading to a poorly justified decision to automate and poor management of the process.⁶⁹ It is notable that other New Zealand ports experienced the impacts of COVID and have unionised workforces but did not have the problems that Port of Auckland had during this period.

The slow throughput, the accidents, and the decision to write off the software and guidance system show that, in the end, the systems driving automated straddles could not be integrated into the port to deliver on POAL management's dreams: the port could not be made to work with the precision, speed, and safety offered by a human driver.

New POAL CEO Roger Gray, who called an end to the project, summed up the failure of the automated straddles:

The challenge that we had with the automation project was the stability of the software and their ability to run at the speed we needed them to.⁷⁰

MISSTEPS AND FAILURES: THE MISSING VOICE

The road to failure was paved by poor management strategy and implementation.

The Binns Report is clear. Embarking on what POAL management repeatedly called a “world first” was an extremely ambitious choice, not supported from inception by the quality management and board oversight that was required to give it a chance of success.

The plan took the best-performing container port in Oceania and sought to introduce complex automation while it continued to operate, while doubling its container throughput on the same footprint, and dismissing 1 in 6 of the core workforce. POAL management accepted the risk involved in the project. As they admitted:

“There is a significant operational risk in a project like this, particularly because we are automating an operational terminal. The consequences of a breakdown or systems failure after we go live would be severe.”⁷²

“A MANUAL OPERATOR, I FEEL, HAS SO MUCH MORE THAN THE COMPUTER AUTOMATION CANNOT SENSE. THEY CAN TELL THE WEATHER, THEY CAN GAUGE AND TIME WIND GUSTS, THEY CAN TELL BY THE EQUIPMENT IF SOMETHING’S GOING TO HAPPEN.

MANY A TIME I’VE HEARD A SOUND AND STOPPED. AUTOMATION WOULD HAVE KEPT GOING UNTIL THE SENSORS TOLD IT TO STOP. CARE, ATTENTION, THOSE ARE THE SORTS OF THINGS THAT PEOPLE BRING TO THE ROLE.”

GRANT WILLIAMS, STEVEDORE.⁷¹

One would expect that personnel with frontline experience and expertise would be consulted in the development and implementation of a project of this magnitude. Even in a workplace with a history of contested decisions, the magnitude and impact of the proposal was such that all affected parties, steeped in operational knowledge, might be involved.

Instead, POAL management chose not to engage with its workforce. Instead, it presented the stevedores and their union with a fully developed plan. It was “participation by fiat”, limited to two briefings on what was going to happen, rather than the offer of any substantive voice. The Binns Report does not shy away from this failure:

“It was transformational in nature and required a high degree of cooperation and planning across the business... There was a failure to ensure the Project teams’ organisational design, accountabilities and dynamics were appropriate. In particular, the Project team did not include sufficient trusted senior subject experts from within the business, who would have provided a “practical lens”. It was

incumbent on the Board to [ensure]... the Project team was appropriately resourced with employees with expert knowledge in key areas.”⁷³

The failure to work with relevant frontline staff, and the presentation to workers of automation as a fait accompli, not only flies in the face of sensible management of a project of this magnitude but also confirmed the union belief that automation was, in large part, about breaking organised labour in the port.

The Binns Report makes it clear that the appropriate foundations for the project were not laid from the beginning. He criticises the foundation decision to proceed with partial automation, describing it as proceeding through momentum, rather than on its merits, including the selection of the vendor, and lacking adequate safeguards:

“At the time of the commitment in April 2016, there was a lack of formal re-evaluation of the potential options and a resulting lack of formal confirmation as to why partial automation was at that point the preferable solution.



The vendor selection process was not sufficiently well-structured... which was particularly important in circumstances where the chosen vendor had been working with the Company on a consultancy basis since 2012 and had a material role in establishing the assumptions around the proposed solution.

...The lack of analysis of the IT risks associated with the Project was the most significant. There was inadequate senior management input into the procurement of the automation software.”⁷⁴

Binns' comments on the 2016 decision and its foundations are telling. He suggests baldly that both board and senior management failed in a fundamental duty to evaluate professionally the proposed project. In a project in which new technology was to play a significant role, Binns suggests management failure was here “the most significant”.

If there had been a proper evaluation of the project before proceeding, POAL would have been aware of the international experience,

discussed above, that port automation does not deliver higher productivity and faster throughput, and is particularly unsuited for a port contending with a limited footprint.

Instead, in late 2020, a POAL manager boasted on Radio New Zealand that the slow container rate being achieved in late 2020 was “at a similar level of proficiency when compared to similar automation systems overseas, in Australia for example”.⁷⁵ These were, as previously noted, the same ports that the Port of Auckland had overtaken in productivity performance before the automation project started.

To sum up, if increased container throughput was indeed the primary goal of the automation project, then it proved to be a poor choice, inexpertly made and implemented in the face of contrary evidence, especially in the context of, first, an operating port with a restricted footprint, and second, an unrealistic goal to move twice as many containers through that limited space.

SECTION 3: CONSEQUENCES FOR THE PORT

Recent years have seen the port experience declining container throughput, slower crane rates and truck throughput, fewer ship visits, the impositions of congestion charges, and declining profitability.

The impacts of COVID are mentioned by POAL management and others in explaining these results but this fails to explain why other New Zealand ports did not experience the same outcomes. What made the port unique was the automation programme. COVID may have compounded the difficulties in rolling out automation. However, notably, the Binns Report does not attribute any of the failure of the project to COVID. Certainly, the failure of automation and its consequences cannot be laid at the door of the pandemic.

PRODUCTIVITY CRASHES

The attempt to create an automated operation on a working wharf and then, the failure of the automated straddles to work fast enough and safely, led to congestion.

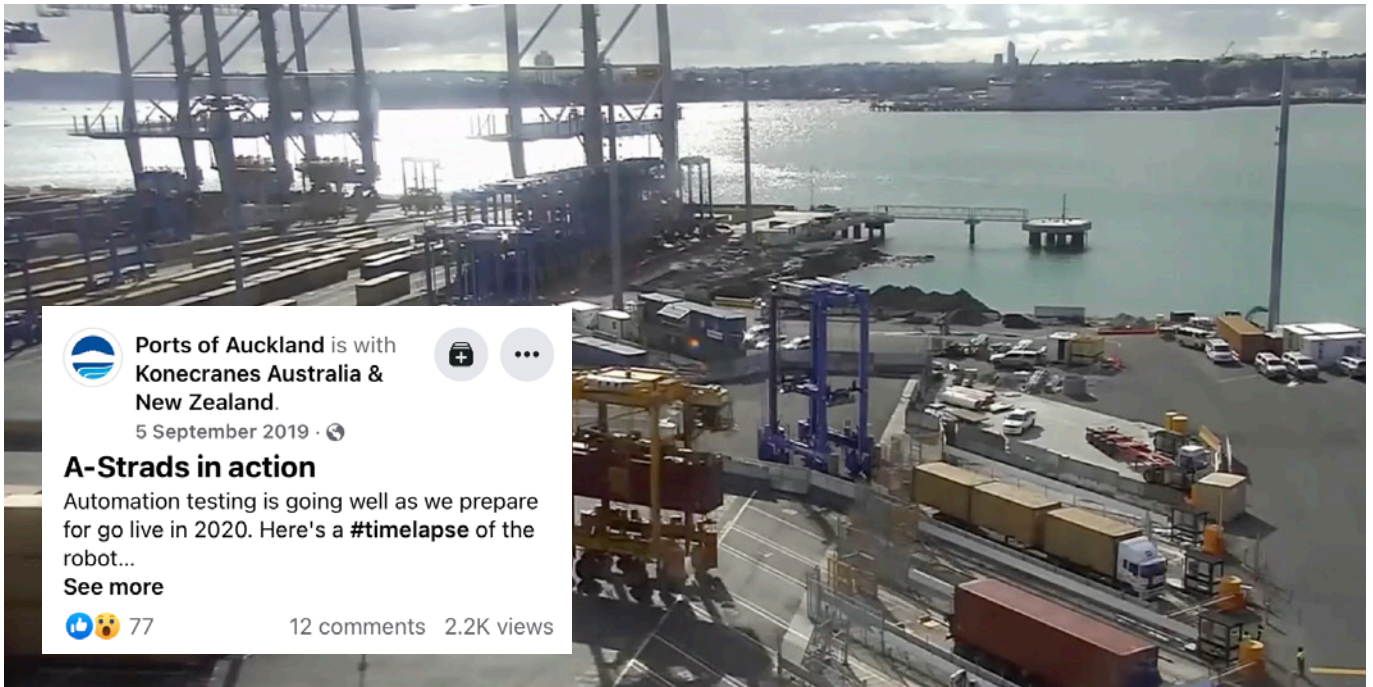
Up to 30% of the terminal's yard capacity was lost to automation-related infrastructure work.⁷⁷ Inevitably (and predictably) the loss

of usable space increased workload in the manual area. Increased utilisation in the manual area was compounded by the slow operation of the automated straddles once they began work. Operational updates released over 2020-2022 show the automated yard was usually below 50% capacity and as low as 30%, while the manual yard was usually near or over 100% capacity.⁷⁸

A congested container yard becomes less efficient. Accessing containers required for transport requires more frequent movement of other containers that are blocking access. The congested yard in turn impedes the work of trucks and cranes.

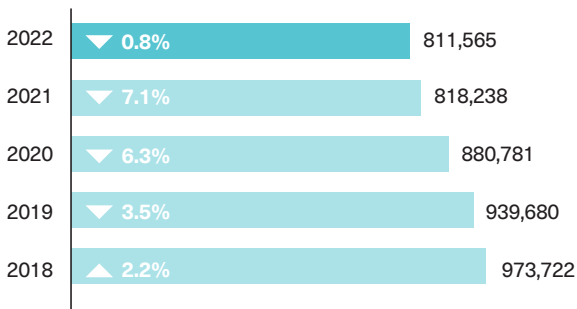
Falling container throughput was inevitable, and started well before COVID, as reflected in POAL's annual reports. By 2021, crane rate had fallen to 24.8 moves per hour, down 30% from the 35.83 rate in 2018.⁷⁹

In contrast, the bulk and breakbulk parts of the port's operation, which were not being automated, did not see the same ongoing fall in throughput, experiencing only a temporary downturn associated with the first COVID lockdown.



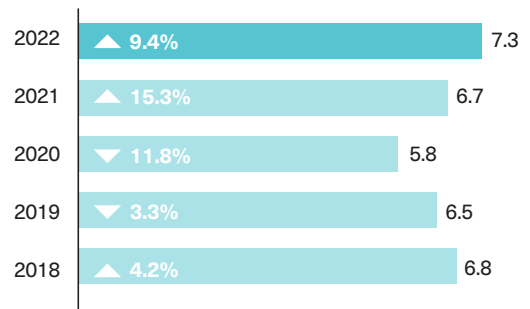
When POAL posted a video to the company’s Facebook page in 2019 showcasing their new “A-Strads in action”, it further demonstrated to the public that the automated carriers failed to attain the productivity demonstrated by the human-operated manual carriers.⁷⁶

Container throughput



TEU (one TEU = one standard 20-foot container)

Total bulk & breakbulk

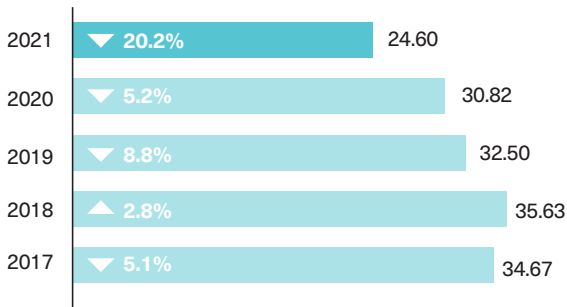


Million tonnes

Source: Ports of Auckland, 2022 Annual Report.⁸⁰

Crane rate

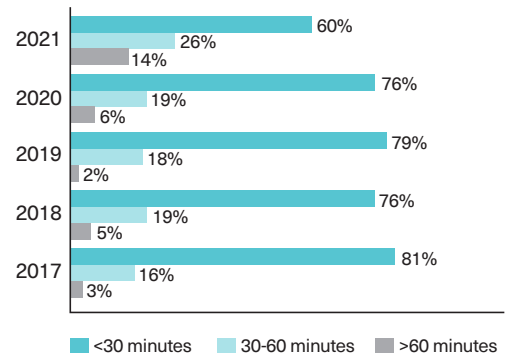
(Australasian Waterline standard)



Container moves per hour

Truck turnaround

(% of trucks turned around in time)



Source: Ports of Auckland, 2021 Annual Report.⁸¹

POAL management acknowledged these issues but portrayed them as transitional:

“Port automation is usually done on new ports or terminals, or in areas that are able to be closed. Because we don't have any spare land, we are automating our terminal while still operating, which naturally results in a loss of capacity. This made it harder to handle peak throughput and has resulted in the loss of a significant container service.”⁸²

Following the first COVID lockdown, New Zealand's economy rapidly bounced back and demand surged, but the port was unable to handle the consequent increase in throughput. Compounding the physical capacity issue, the port now found it needed more workers than expected because automation was too slow and too unreliable and not taking the workers' place. After years of not investing in its workforce, a hiring freeze, and with the threat of redundancy encouraging workers to leave, in November 2020, POAL management admitted to being 50-80 workers short⁸³ (see *Impact on Workers*, below).

POAL was forced to abandon fixed berthing windows as the terminal's throughput became unreliable. Vessels stacked up offshore waiting for a berth, with delays of up to 18 days

reported.⁸⁴ In October 2021, Freight Federation president Chris Edwards said that delays to the automation project had contributed to the inability of POAL to reinstate fixed berthing windows.⁸⁵

By the first quarter of 2022, with automation still not delivering and reducing yard capacity, compounded by the spread of COVID in New Zealand, the expected wait time to get a berth had risen to 14 days, with some ships waiting up to 22 days.⁸⁶

By April 2022, shortly before the automation programme was scrapped, Edwards said “the Auckland port situation is still a diabolical mess – vessels are still going up to Northport which shouldn't be happening”.⁸⁷

The end of the automation programme did not mean an end to the productivity issues it has created. Failure generates its own problems, logistically and financially. Today, the port is in the process of reverting back to 100% manual operations. It has 27 automated straddle carriers to deal with as well as manual carriers that are at the end of their usable lives, which it had been planning to replace with the automated carriers. In March 2022, Konecranes reported that POAL had ordered five manual straddles.⁸⁸

Maersk Line introduced congestion charges on POAL's customers, and its vessels made more calls to competitor Port of Tauranga (pictured) than prior to Auckland's automation attempt.



CONGESTION CHARGES

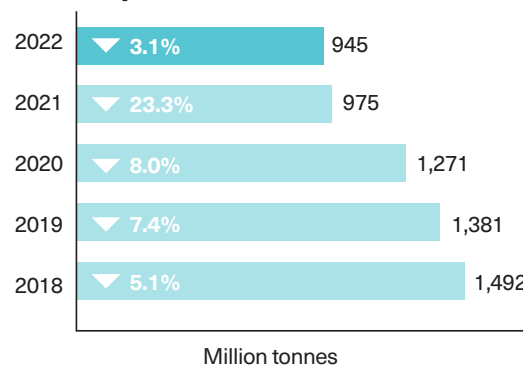
The congestion issues created by failed automation were so serious that the port faced significant congestion charges from both shipping lines and trucking companies. Congestion issues began as early as 2018 as testing and infrastructure works for the automation project reduced the container yard's capacity.⁹⁰

For example, New Zealand's largest container transport company, Tapper Transport, announced a congestion charge of \$50 on all POAL import/export containers effective from 1 November 2018.⁹¹ Other trucking companies followed suit, with Mondiale, New Zealand's largest private freight forwarder, reporting: "A number of the trucking companies have decided to levy an approximate \$50 charge per container (varies from trucking company to trucking company) to off-set port congestion."⁹²

In its own efforts to move containers through the port faster, POAL reinstated demurrage in February 2019.⁹³ The company also created a new vehicle booking system and imposed

fees on trucking companies that did not use booked slots for container pick-ups,⁹⁴ although Australian logistics company Henning Harders said this new system actually worsened the congestion.⁹⁵ The congestion issues due to the infrastructure works were serious enough that POAL delayed the planned "go live" on automation from late 2019 to 2020 to avoid a repeat of the 2018/19 peak season congestion.⁹⁶

Ship calls



Source: Ports of Auckland Annual Report 2022.⁹⁷

Shipping lines began to charge congestion charges on POAL containers in late 2020. In announcing its congestion charge on 6 November 2020, Maersk said “We are experiencing significant vessel delays with waiting times currently up to 12 days, resulting in vessel omissions and contingencies significantly impacting our overall operational costs”.⁹⁸

Maersk’s charge was USD \$215 per export/import TEU, while MSC charged USD \$300 per TEU, including on coastal cargo.⁹⁹ ONE, COSCO, PIL, ZIM, Pacifica Shipping, Hamburg Süd, and ANL would all impose congestion surcharges on the Port of Auckland in the following months.¹⁰⁰ As a consequence, cargo was increasingly diverted to other ports and ship calls fell.

The holdups at the port became so severe that the first shipment of extra refrigerators needed for the COVID vaccine arrived in New Zealand waters late 2020 but weren’t offloaded until early 2021 because of congestion.¹⁰¹

POAL blamed COVID issues, Australian industrial action, and workforce shortages for the congestion.¹⁰² However, it is important to note that New Zealand was COVID-free for much of this period with little in the way of domestic restriction of business operations, and congestion charges were only imposed on the Port of Auckland, not on other New Zealand ports.

In January 2021, Auckland Mayor Phil Goff wrote to the POAL Board saying:

*“I am aware there are some delays to the completion of the automation project. Since the end of September 2020, it has become clear that there is significant congestion at the port which is affecting how quickly customers receive their goods **and the delay to the automation project is playing a role in that [emphasis added].”**¹⁰³*

By the time that shipping lines began to withdraw their congestion charges in October 2021, the Customs Brokers and Freight Forwarders Federation estimates that shipping lines charged around \$146 million on containers going through the port.¹⁰⁴ Maersk kept its charge in place until June 2022, adding to this cost.¹⁰⁵

Shipping lines began to divert to other New Zealand ports, impacting the port’s revenue. In March 2021, Hapag-Lloyd, Maersk, Hamburg Süd and MSC “structurally removed” Auckland from their joint Oceania-US East Coast service in a “continued effort to safeguard schedule reliability”.¹⁰⁶

Reducing emissions was one of the goals cited by POAL to justify automation. However, the trucking congestion, added onshore transport from other ports to Auckland, and time spent by ships waiting at sea would all have contributed to increased carbon emissions. These emissions by third parties are not captured in POAL’s official reporting.

IMPACT ON POAL FINANCIAL PERFORMANCE

The total cost of the automation project has not been revealed but a figure of \$330 million is frequently cited and industry experts estimate it to be as high as \$400 million.¹⁰⁷

Without doubt, automation consumed hundreds of millions in capital investment. From FY2012 to FY2016, capital investment averaged \$41 million. During the three-year main automation investment period from FY2018 to FY2020, capital investment totalled \$382m. Following the abandonment of the automation project, POAL has announced it will “write-off approximately \$65 million in investments which will no longer be used, mainly the automation software and guidance system”.¹⁰⁸ POAL is also now looking to convert the automated straddles to manual operations at an unknown cost.¹⁰⁹



Auckland Mayor Phil Goff became publicly critical of the port's management and board as the automation project's failures mounted and dividends to its owner Auckland Council fell.

At the same time, revenue, which had risen from \$179 million in FY2012 to \$248 million in FY2019, fell to a low of \$226 million in FY2021.¹¹⁰

Whereas 20% of revenue had gone on capital investment in prior years, 44% of revenue went on capital expenditure during the automation programme, peaking at 59% in FY2019.

At the same time, no reduction in operating costs occurred and personnel savings that were meant to result from automation did not happen. Operating expenditure increased every year of the automation project, from \$142 million in FY2018 to \$158 million in FY2022.¹¹¹

Dividends to Auckland Council, which had been running at over \$50 million a year up to FY2018 were, in turn, reduced markedly with an average of \$10 million paid over the next four years – a total loss of \$160m to the council so far.¹¹²

In late 2021, POAL announced a new infrastructure levy of \$20 per TEU from 1 Jan 2022, doubling to \$40 from 1 July, which was to help pay for the automation project and port upgrades.¹¹³ Following the scrapping of the automation project, the levy has been left at \$20 indefinitely.¹¹⁴

COUNCIL OWNER'S DESPAIR

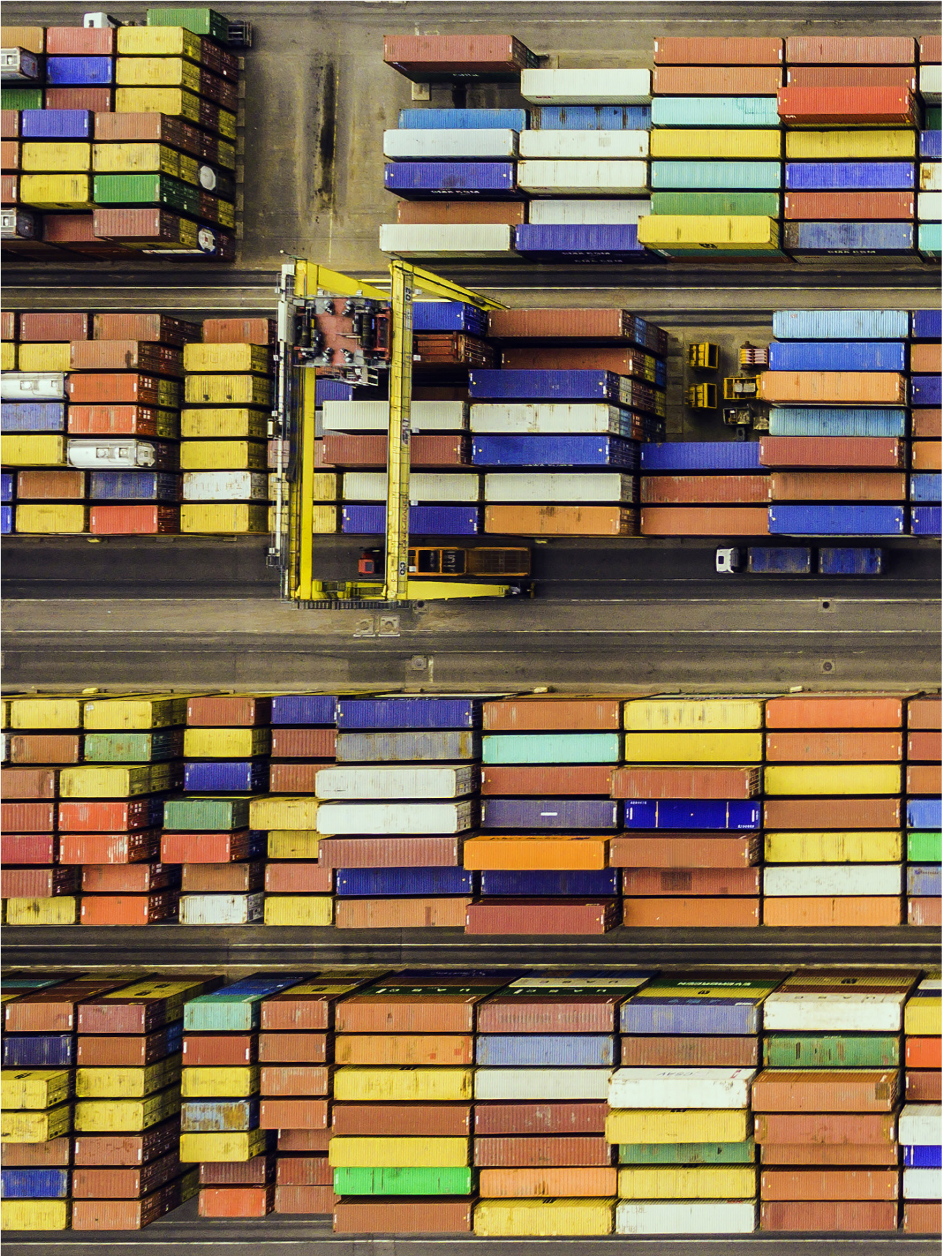
Auckland Council was not happy about lower dividends as a result of failed automation. It was another headache caused by a problematic council-owned operation. In January 2021, Mayor Goff requested Ports of Auckland chair Bill Osborne to:¹¹⁵

1. Explain POAL's performance to the council.
2. Commission an independent review of the project.
3. "Share the results with the council."¹¹⁶

This independent report does not appear to have been produced. In a subsequent letter in March 2021, Goff wrote to Osborne stating baldly that POAL management "does not show a willingness to be accountable for its performance".

The acrimony that developed between the port's management and its owners is still playing out in the media with the former CEO and outgoing Mayor trading barbs.¹¹⁷ Mayor Goff recalls:

"Each year, we were getting a worse and worse return. The competitiveness of the Ports of Auckland was declining against



Tauranga. We were losing shipping lines. You look at every one of those statistics, the return on equity, the ship rate, the crane rate. They were all deteriorating.”¹¹⁸

The decline in POAL's profitability during the automation programme has seen new Auckland Mayor Wayne Brown speculate on selling shares in the company and closing down parts of the port.

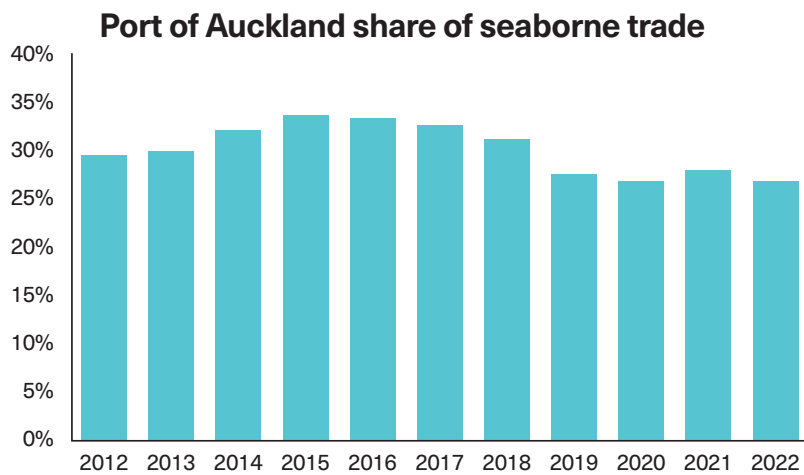
DECLINE RELATIVE TO OTHER PORTS

The port became less important as a locus of New Zealand trade over the years of the automation attempt. Like all businesses, reputation has an impact on the port's standing with customers and its sales performance. Until 2018, the Port of Auckland was New Zealand's biggest seaport, safely accounting for a full third of the country's seaborne trade in the years leading up to automation.

This fell to 27% in the years following 2018, with Auckland now eclipsed by rival Port of Tauranga which now has the largest share of the country's seaborne trade.

POAL's dislocation as a result of failed automation also damaged its reputation internationally. In 2016, the port had been named 'Best Seaport in Oceania' at the Asian Freight, Logistics and Supply Chain (AFLAS) Awards¹²⁰ and it retained that title in 2017 and 2018.¹²¹ But this reputation rapidly declined as the automation project progressed.

By the time of the World Bank's *Container Port Performance Index 2021* was published in May 2022, the Port of Auckland was ranked as the worst container port in Oceania.¹²² The Index rated the port the 351st out of the 370 ports it ranked globally, a sharp decline from its place in the top half of ports globally in 2020, when the World Bank had placed it 118th-best.



Source: Statistics New Zealand, 2022.¹¹⁹

SECTION 4: WIDER IMPACTS ON NEW ZEALAND

The port is the first New Zealand stop for a large portion of ships visiting the country. What happens at the port impacts the rest of New Zealand's ports and the country as a whole. Failed automation simultaneously caused difficulties across the New Zealand port system and strengthened the claim by other ports for priority. POAL had fallen a long way from its expansionist, *primus inter pares* gloss of the 1990s.

The congestion at the port saw ships divert to other ports, principally the Port of Tauranga and Northport,¹²³ the ports closest to Auckland. The Port of Tauranga reported that in December 2020, the average cargo exchange per container vessel was “21% higher” compared with December 2019 “due to the cargo bypassing Auckland”.¹²⁴

In turn, these two ports and their related inland ports became congested, although not as severely as the Port of Auckland itself. At the beginning of 2021, the Port of

Tauranga instituted congestion charges of its own on long dwelling containers in an attempt to reduce congestion,¹²⁵ with CEO Mark Cairns saying: “The congestion we are facing is due to issues at Auckland's port,”¹²⁶ and “Unfortunately, the threat of congestion remains and is unlikely to dissipate until Ports of Auckland sorts out its operational problems”.¹²⁷

Cargo offloaded at other ports then had to be transported via road or rail to Auckland's inland ports, congesting both transport networks and those inland facilities. Freight Federation Chair Chris Edwards said in December 2021 that getting a container from Tauranga to Auckland via rail was taking two weeks, as opposed to the normal two days.¹²⁸

The problems at the Port of Auckland caused other ports to lose ship visits, which hurt exporters' ability to deliver goods to market. In 2021, Lyttelton Port's container operations General Manager Simon Munt said ships



The poor reliability and productivity of the port's new automated straddles caused knock-on congestion for other transport modes. In Auckland, trains would often be backed up over several kilometres, waiting for available straddle carriers.

carrying imports were leaving the Port of Auckland 10 to 12 days behind schedule, and “it means they don’t have time to call at Lyttelton... If we’re getting fewer calls, there’s less capacity to take volume out of Lyttelton”.¹²⁹ The Port of Tauranga similarly complained of “severe vessel delays out of Auckland since September”.¹³⁰ In Wellington, public servants were reporting to government ministers in September 2021 that: “With automation delays and labour shortages, POAL is one of the key pinch points in the shipping disruptions affecting the whole country”.¹³¹

By the end of 2021, just 20% of ships were hitting their visit schedules for New Zealand. This made the export of chilled meat, which has to be shipped within a short time window, ‘high risk’.¹³²

Into 2022, Maersk was reporting that: “the J-Star service connecting New Zealand with north-east Asia – Japan and South Korea – that continues to call at Ports of Auckland without omissions, is sliding one vessel position every three weeks - this effectively means that we are losing 33 per cent capacity of the service.”¹³³ In March 2022, MSC and TS Lines were also omitting the port from their New Zealand schedule.¹³⁴

Freight Federation Chair Chris Edwards put the blame for nationwide supply challenges on the Port of Auckland: “They have to accept much of the responsibility for our supply chain issues. The fact that Auckland wasn’t working properly disincentivised other shipping lines from servicing NZ routes. We’d hoped the project would be finished in February or March, but now it looks like they’re going to go right to the wire based on this announcement”.¹³⁵

Shipping diversions and delays particularly affected New Zealand exporters trying to get chilled and frozen goods to market by creating a shortage of refrigerated containers. Gary Monk, founder of seafood exporter Intersea, said: “The shipping companies cannot give us New Zealand primary exporters of frozen products enough containers to meet the demand.”¹³⁶

ECONOMIC COST OF DISRUPTION AT PORT OF AUCKLAND

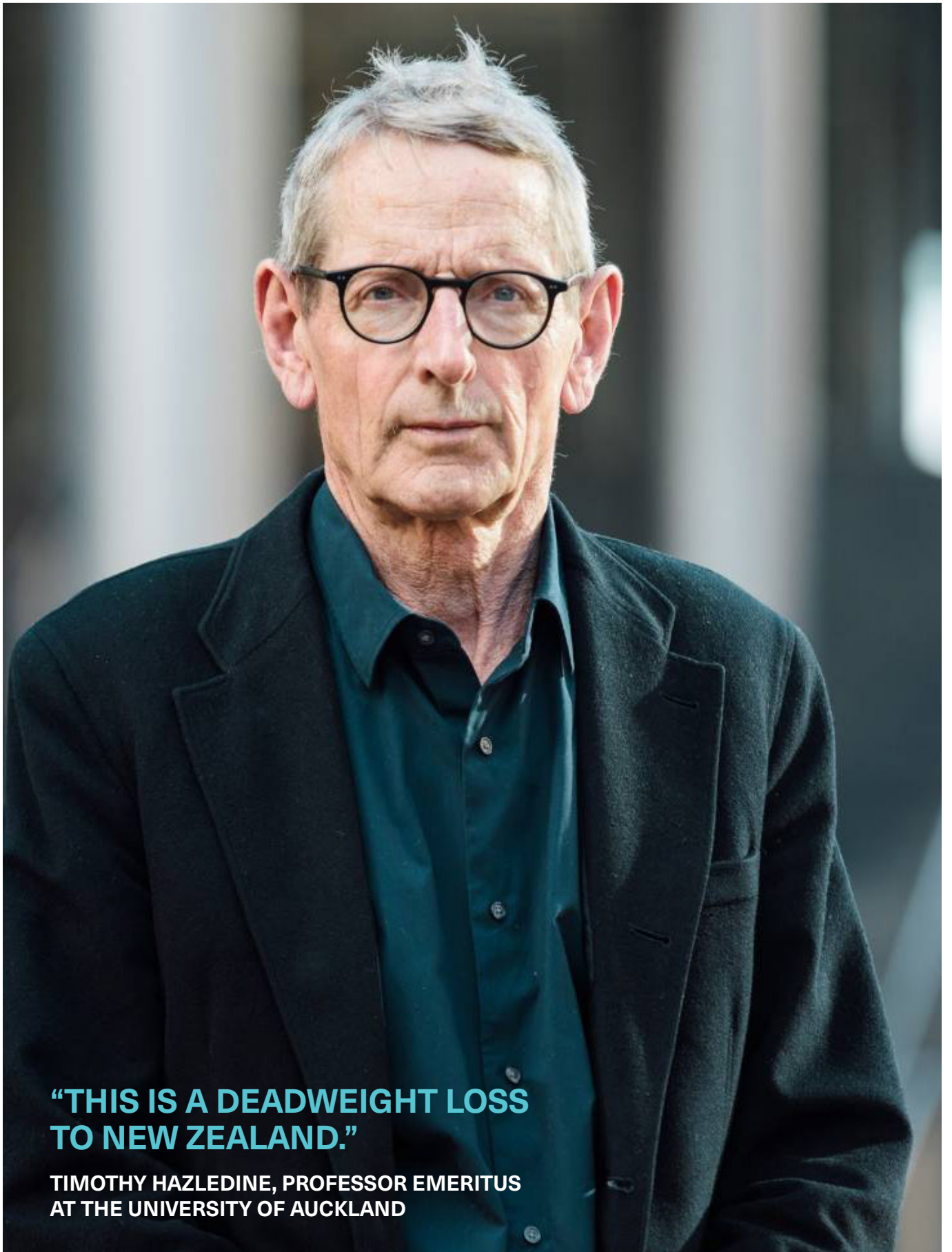
For this report, Emeritus Professor of Economics at the University of Auckland Timothy Hazledine has analysed the costs of the congestion charges, disruption, and delays at the port.

He estimates that congestion charges levied by the shipping lines for containers at Ports of Auckland amount to around \$150 million.

Additionally, delays in moving goods create economic costs. Based on a study carried out for Waka Kotahi, the New Zealand Transport Agency,¹³⁷ Professor Hazledine estimates that delays in receiving goods have an average loss of value of approximately \$1 per hour per tonne to businesses. 3.4m tonnes of containerised goods were imported through the port in FY 2021.¹³⁸ From November 2020 through to April 2022, wait times for ships to get berths of as long as 22 days were being reported.^{139,140} Assuming a conservative average delay of five days, Hazledine estimates a cost to the New Zealand economy of \$1 billion over this period.

This analysis puts the cost of automation project write-offs, combined with congestion and delays induced by the automation project and exacerbated by COVID, at over \$1.2 billion.

That \$1.2 billion economic cost is equivalent to 17 years of POAL’s average profits prior to the automation project commencing.¹⁴¹



**“THIS IS A DEADWEIGHT LOSS
TO NEW ZEALAND.”**

**TIMOTHY HAZLEDINE, PROFESSOR EMERITUS
AT THE UNIVERSITY OF AUCKLAND**

SECTION 5: IMPACT ON WORKERS

AUTOMATION FAILURE SEES PRESSURE PUT ON WORKERS

The automation project appropriated available space at the terminal for its straddle carriers that for various reasons were failing to improve productivity. The result was that management sought greater productivity from the manual carriers to make up the port's overall shortfall, putting additional pressure on those working in the manual yard.

However, extracting higher volumes from the workforce working the manual carriers to rates beyond their already comparatively high performance, so was not an easy mission, nor was it without consequence.

The seeds of difficulty for the port had been sewn for years already by that point. When the automation decision was announced, recruitment had started to take a nosedive. Attrition had increased.

The port was explicit in pinning its hopes of reducing the size of its labour pool through the implementation of automation. The prospect that the port would need 50 fewer stevedores going forward, had made it a less attractive place to go to work for. Potential applicants wondered if they would be first-out, if they'd been first-in (a common principle in compulsory redundancy processes).

Workers report that management paid less attention to training new workers as they thought they would not be needed once automation came online.¹⁴³ And maybe they were right: new POAL CEO Roger Gray told media: "There had also been a sinking lid on recruitment with the plan for automation".¹⁴⁴ The 'sinking lid' policy (essentially not replacing staff when they left, gradually reducing the size of the workforce) had resulted in a shortfall of 50-80 workers by the time automation had failed to deliver.¹⁴⁵

POAL attempted to address this workforce shortage by increasing worker hours and varying rosters, as well as making workers work faster. Stevedores were required to work up to 60 hours a week in 12 hours shifts, with notice about work requirements only being given the day before. MUNZ challenged this practice in court and was successful in having the practice ended, with the maximum mandated work week reduced to 48 hours from December 2021.¹⁴⁶

An incentive scheme dating from the 2012 labour dispute was increased to give sizable bonuses to the 10% most productive employees each month. Employees had no way to know how their productivity compared to other workers', so they were incentivised to push limits.

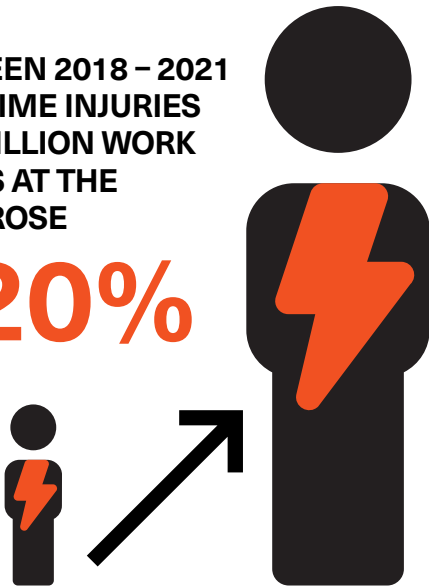
“HEALTH AND SAFETY RULES THAT KEEP PEOPLE SAFE ARE NOT ‘A NICE TO HAVE’. THEY ARE A VITAL COMPONENT OF GOOD MANAGEMENT IN ANY WORKPLACE. WHEN SOMEONE GOES TO WORK, THEY SHOULD GO BACK HOME TO THEIR FAMILIES AND LOVED ONES.”

PHIL GOFF, MAYOR OF AUCKLAND COUNCIL (THE PORT’S OWNER).¹⁴²

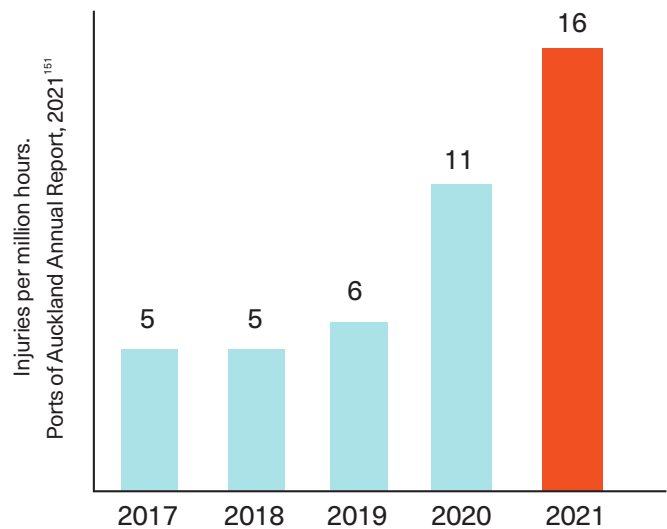


**BETWEEN 2018 – 2021
LOST-TIME INJURIES
PER MILLION WORK
HOURS AT THE
PORT ROSE**

320%



Lost-time injuries (LTIs)



Health and safety fell by the wayside, with workers reporting that their concerns were ignored or they were punished after raising them.¹⁴⁷ Craig Harrison, the National Secretary of MUNZ, explained that for:

“A worker who felt vulnerable or felt they were going to get replaced, they did their best to stay in that top 10% [of the bonus scheme]. With the threat of automation, that you could be in the selection where you could lose your job: these young workers went even faster. We had more collisions, and again the company ignored what was going on...”¹⁴⁸

Which is when corners began to be cut, said Harrison:

“They [manual straddles] have what’s called a stability alarm, and they were going off in the thousands and that was saying the machines were getting pushed past their capabilities. So, rather than throttle the machines back, there’s emails showing they told the mechanics in the workshop ‘no, don’t change anything, we want to keep this going’. And then we saw the first time, in a long, long time, a straddle was turned over and a young worker was killed on the worksite.”¹⁴⁹



MUNZ National Secretary Craig Harrison speaks to media after another workplace fatality at the port.

There were consequences of this work pressure. For example, in 2017, POAL management had taken steps to reduce the incidence of tip alarm activation but, when activations decreased, the programme was ceased, and tip activations returned to their previous high.¹⁵⁰

Predictably, incidents and injuries increased at the port. After decreasing markedly in prior years, the number of injuries leading to time off work tripled from 2018 to 2021.

DEATHS AT THE PORT

Laboom Midnight Dyer died after his manual straddle carrier toppled over on 27 August 2018. He was the first worker to die in a straddle incident since 1976.¹⁵² Dyer had received the bonus for high productivity.¹⁵³ That he achieved this while also having a high tip alarm rate, should have concerned management.

An investigation by government workplace health and safety regulator Worksafe into his death found faults with POAL's practices including: "... the following gaps in training or processes for straddle drivers:¹⁵⁴

- Insufficient monitoring of tip alarm activations;
- "Operating a bonus system based on productivity which would cause drivers to feel that they had to work as fast as possible. Mr Dyer had a high tip alarm activation record. Despite that record he consistently received his bonuses..."¹⁵⁵
- And that POAL had failed to ensure "the bonus scheme incorporated parameters that promoted safe driving, to counter any incentive to achieve greater productivity at the expense of safety".¹⁵⁶

In the sentencing over the incident in 2020, Justice Thomas said: "There was a systemic failure to instil and maintain a culture of safety and compliance...The bonus scheme departed from the industry standard. The hazard was obvious".¹⁵⁷ POAL pled guilty to failing to ensure the health and safety of its workers and was fined \$540,000. The port was ordered to pay a further \$136,000 to Dyer's family.

Despite this record, in 2019, POAL told Auckland Council: "Our entire management team is focused on ensuring [automation] is delivered successfully".¹⁵⁸

Workplace deaths at the Ports of Auckland have become a regular feature on New Zealand televisions in the years since the automation project began, with three workers killed in just four years.



Staddle operator Laboom Dyer was killed at the port in 2018.

In August 2020, Pala'amo (Amo) Kalati was killed when a container fell on him at work. Such was the pressure for productivity, an unnamed stevedore said that a manager told the workers they had to keep working while his body was still lying on the port: "The boys refused and his comment was 'look at it like it was an accident on a motorway, you see it and you carry on'".¹⁵⁹

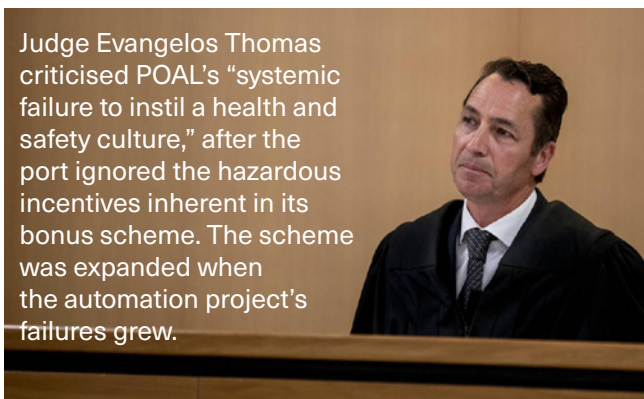
Subsequently, government regulator Maritime New Zealand charged POAL and then CEO Tony Gibson with: "Reckless conduct in respect of a health and safety duty, failing to comply with a duty that exposes an individual to the risk of death or serious injury and adverse conduct for a prohibited health and safety reason."¹⁶⁰ The case will go to trial in 2024.

Following Kalati's death, Auckland Council appointed Construction Health and Safety New Zealand (CHASNZ) chair Roger McRae to lead an independent review into health and safety at the port.¹⁶¹ This report found:

"Safety as a core value needs an increased focus for all frontline leaders and management...Container Terminal Operations (Stevedoring) views were more negative in terms of safety leadership... Elements of the workforce who undertake high risk roles (mainly terminal operations) believe that executive management



The grieving family of Pala'amo (Amo) Kalati rushed to the port in the hours after his death in August 2020.



Judge Evangelos Thomas criticised POAL's "systemic failure to instil a health and safety culture," after the port ignored the hazardous incentives inherent in its bonus scheme. The scheme was expanded when the automation project's failures grew.



Workplace deaths at the Ports of Auckland have become a regular feature on New Zealand televisions in the years since the automation project began, with three workers killed in just four years.

prioritises profitability and productivity over H&S and this is reinforced at the operational leadership level... the automation project is unable to make a robust safety case for the development and operation of the automated straddles at Fergusson Wharf. It would be reasonable for a major project involving a new approach to integrating automated plant into an existing manual operation to have developed a safety assurance framework to enable an appropriate case to be made about the overall system safety during design, development, and operation." ¹⁶²

Among its recommendations, the report found the role of the CEO should be reviewed and refined with key requirements including "Prioritising safety over productivity and profitability". ¹⁶³

It is reasonable to consider the role of the board in this context. A company's health and safety record is an important strategic concern at many levels. A poor record in this regard can

have significant consequences for the asset, its owner and even members of its board in some jurisdictions. There must therefore be serious questions asked about the level of health and safety oversight maintained by the board to allow POAL's safety record to decline so rapidly and with such irreparable impact.

In April 2022, Atiroa Tuaiti died after falling from a height while working for a stevedoring contracting company on a docked container ship.¹⁶⁴ The investigation into his death is ongoing. Following Tuaiti's death (and another at Lyttelton Port in the same week), Minister for Workplace Relations and Safety, Michael Wood, directed the Transport Accident Investigation Commission to commence an investigation into the recent port fatalities, and sent Maritime NZ and Worksafe staff to inspect each international seaport.¹⁶⁵

All three stevedores killed on the port have been Māori and Pasifika. Port CEO Tony Gibson claimed the problem was unwillingness amongst those workers to report health and

“WE’VE REPORTED NEAR MISSES AND ACCIDENTS AND SO ON AND WHEN WE DO A LOT OF THAT’S IGNORED - SOMETIMES GUYS GET PUNISHED, REDUCED NUMBER OF SHIFTS, AND THAT’S THE CULTURE OF MANAGEMENT, THAT’S HOW THEY TREAT US.”

ANONYMOUS STEVEDORE TO RADIO NEW ZEALAND¹⁶⁸

safety issues: “we have a large Pacific Island, Māori community, and very often they are what I would call ‘shy’ in coming forward to address issues.”¹⁶⁶

An unnamed stevedore rejected the racial stereotype Gibson was advancing to shift blame towards ethnic minority workers at the port. In an interview with Radio New Zealand, the anonymous worker said: “I don’t think he realised how ... racist that came out and a lot of guys weren’t happy about it. Some didn’t want to come into work.”¹⁶⁷

Along with the prosecutions by government agencies, MUNZ and POAL fought successive court cases over health and safety, with the court finding in favour of MUNZ in 2018 on workers being given a reliable roster and adequate notice of work shifts,¹⁶⁹ and POAL agreeing to reduce mandated hours from 60 hours per week to 48 per week in December 2021.¹⁷⁰ Management also agreed to a workers’ request to be able to pair their two days a



26-year-old Atiroa Tuaiti died while working on a container ship at the Ports of Auckland in April 2022. He leaves behind a partner and young child.

week off.¹⁷¹ Nevertheless, the port’s reputation as a good place to work, in the midst of a recruitment crisis, had been shattered. Stevedore Grant Williams, who was involved with the implementation of the automation project, explained:

“After Laboom and Amo, people can see it’s not a good area to go work in. Especially after Amo’s passing, the morale went really, really low.”

The impact of their colleagues’ deaths is expected to be felt for some time by the workforce:

You can go down there now, and you use the right combinations of words at the right time, you’ll get tears in people’s eyes. That’s the sort of trauma that’s in the back of our mates’, our workers’, our members’ minds. And it’s hard, because it’s always there. It’s there now.

That is forever for them.”

– Grant Williams, Stevedore.¹⁷²

SECTION 6: MOVING FORWARD

The final failure of the experiment in automation at Auckland brings with it acceptance that some things were done wrong, and some relationships neglected.

New Ports of Auckland CEO Roger Gray, who ended the automation programme, speaks of a new opportunity to “get back to basics”.¹⁷³ He indicated some lessons from the automation failure have already been learned, promising that he was “committed to making real change at the Ports of Auckland. We will work in partnership with our workers, with our unions and with our port users to make Ports of Auckland a workplace where all workers are safe and where they can thrive”.¹⁷⁴

Recent operational updates show the terminal remains congested and is struggling to secure enough workers, but overtime utilisation is trending down towards more sustainable levels and fixed berthing windows have been restored for some shipping lines.¹⁷⁵ It remains difficult to attract staff in part due to what the

New Zealand Herald calls the port’s “grim health and safety record”.¹⁷⁶ The long tail of automation, perhaps.

Recently, POAL had to deliver an updated dividend forecast to owner Auckland Council. The port revised its expected profits down \$20 million for FY2024 and 2025.¹⁷⁷ Earlier forecasts had been too optimistic about the automation project’s success. The pattern of dividend hype, then disappointment, then dividend revision, has been one repeated throughout this period. The people of Auckland, the ultimate beneficiaries of the port’s returns, will be looking forward to this being the last year where their returns have to take a hit due to automation cost, write offs or impacts.

Despite the continued dent to its productivity and diminished dividends to its owner, POAL’s management have not entirely given up their taste for the technology, with the new CEO saying in 2022: “We haven’t ruled out automation in the future but we’re not in the

The now-infamous blue 'A-strads' sit idle at Fergusson container terminal, gathering dust after POAL terminated the project in 2022.



position right now to say anything about what that might look like or when".¹⁷⁸ The idea that automation might yet still be the long-term fix to the port's strategic challenges clearly remains appealing, at least to some.

It is impossible to quantify the scale, nor predict the longevity of the impact, of the reputational damage that this period has had on perceptions of the company, particularly by its workforce and their community. Union leaders are understandably mindful of how long a road ahead it remains to seeing the port both productive and as a desirable place to work.

"The sad truth of this Auckland automation saga is that it was totally unnecessary," says Craig Harrison of the Maritime Union of New Zealand. "The evidence was there, they just had to open their eyes and look. If they had just listened the union and the ITF and had for a moment looked at the international evidence on automation: then they would have done

something different and could have saved the people of Auckland \$65 million in write offs. They could have saved the exporters and the importers millions in congestion charges and delays and fees. If they'd listened to us, if they just stopped and listened: they could have saved those young men's lives."

Going forward, POAL will need to demonstrate it has learned the lessons of the value in listening to, responding to, and taking action on, workers' voices. This is a lesson which must be learned not only by POAL's direct management, but also by the port's board and its owner, who ultimately permitted the silencing of workers' voices to go on, to the detriment of the port's productivity, reputation and profitability.

How will things be done differently to better engage workers and management in a healthy, respectful dialogue, as occurs in other ports and other industries? How will the owner prevent a backsliding into the situation where

Auckland stevedore Grant Williams is hopeful about the future.



management was able to for so long silence its critics despite the mounting evidence of the impact on the asset? How will Auckland Council avoid believing the ‘hype’ next time?

Humility and dialogue seem to be the first steps. The POAL board has signed off on a new strategy called “Restoring Our Mana” (‘mana’ is a Māori word meaning pride, prestige, status),¹⁷⁹ indicating that there is awareness of how far the organisation’s esteem has fallen during the failed automation programme.

It is encouraging to see that POAL’s relationship with workers is slowly being rebuilt. Leadership is being shown at different levels of the port and its owner to re-establish dialogue with the workers and their union.

At the end of 2022, a new collective agreement was agreed by POAL and the Maritime Union of New Zealand (MUNZ). This new agreement will guarantee safer and more sustainable working hours. MUNZ reports: “In an industry first, Ports of Auckland stevedores will move to

a salaried income, providing stability of income for families”.¹⁸⁰ The port and MUNZ will work together in a new “high engagement” model and use a dynamic rostering model that should improve productivity without sacrificing jobs and safety.

Craig Harrison says it is time for the healing to begin.

“This lesson in failure would never have happened if management put the evidence before the egos, and just bloody listened to the guys who knew what they were talking about. The good news is that now they know how passionate we are as a workforce and as a union about the future of our port. We want to see it succeed. We want it to be safe, profitable and a real asset to the people of Auckland as a publicly owned port. That’s the future of this port, and we will be there every step of the way cheering it on towards that vision.”¹⁸¹

ENDNOTES

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