

Heini Evers and Roy Weaver

Privatisation of Ports in New Zealand

Abstract

The New Zealand economy has undergone significant change in the last ten years. The Ports Industry is one of the many areas affected by changed Government policy since the mid-1980s. This paper sets out how three ports – Tauranga, Taranaki and Timaru – responded to the changing political and economic climate in one aspect of their business operation: port dredging. It describes the shift from port-operated dredgers to contract dredging.

The dredging situation in New Zealand until 1986 is presented, followed by a summary of the investigation conducted by the three ports of all options open to them. Financial and engineering analyses carried out by independent consultants are reported. The conclusion of these analyses was that the most cost-effective option was clearly to pool their dredging workloads and enter into term contracts with an international dredging contractor. This was effectuated in 1988.

The contract operation is discussed from the perspectives of the contractor and the port companies including: dredging programme flexibility; plant utilisation; human resources and industrial relations; long-term planning of operations; utilisation of port company resources; and contract benefits and problems. The paper concludes with an update on the present situation of this cooperative dredging arrangement.

The paper was first presented at the Australasian Port and Harbour Conference in 1990. The authors wish to acknowledge the contributions to the original paper of John Palmer, who was then Engineering Manager of the Port of Tauranga Ltd. and is presently a consultant for port planning and development based in of Tauranga; of Peter Atkinson who continues to be Technical Services Manager of Westgate-Taranaki Port as it is now known; and of Hadyn Pike, who was Contracts Manager of Australian Dredging & General Works Pty. Ltd. at the time the contract was signed.

Introduction

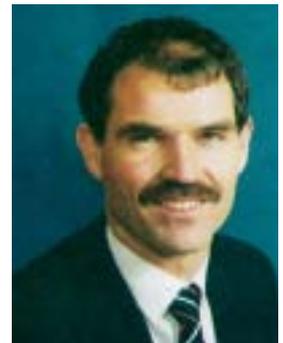
Many ports find the costs of dredging to be one of the major annual operating costs of the port. Such was the case of three New Zealand ports – Tauranga, Taranaki and Timaru (Figure 1). They investigated in detail the

Heini Evers worked for Volker Stevin for more than 30 years and was the Managing Director of both Australian Dredging & General Works and New Zealand Dredging from 1982 until 1992. At that time both companies were part of the Volker Stevin Group of The Netherlands. He is presently an independent consultant with his resident office in Australia.



Heini Evers

Roy Weaver is a member of the Institution of Professional Engineers New Zealand and has a Master's Degree in Business Administration. He joined the Port of Timaru Ltd. in 1985 and is presently its Deputy Chief Executive and Manager of Port Operations.



Roy Weaver

options open to them collectively and individually, and finally settled on contract dredging as the most cost-effective solution.

HISTORICAL BACKGROUND

New Zealand ports, where they had significant on-going maintenance or capital development programmes, historically owned their own dredgers. This stems from the geographic isolation of New Zealand with the consequent very high mobilisation costs of bringing dredgers from even the closest neighbour, Australia. Until 1970 dredgers owned by individual harbour boards were designed, manned and set up for work at their home port only, and there was no real sharing of equipment or contracting out of work to other harbour boards.



Figure 1. The North and South Islands which form New Zealand, with the three ports involved in contract dredging indicated – Tauranga, Taranaki and Timaru.

If a port required capital dredging the practice was to invite tenders from overseas-based companies and enter into a contract. Upon arrival of that contract dredger in New Zealand, it succeeded in picking up other work around the coast and there was some sharing of the overall mobilisation costs to New Zealand.

Port-owned Dredgers

In 1976 the Port of Timaru concluded that the era of bucket dredging at its port was finished and decided to convert the bucket dredger *W.H. Orbell* to a trailer suction dredger. The conversion was carried out recognising that ports such as Tauranga, Napier, Otago and others would intermittently require some on-going trailer dredging work.

In 1985 the Port of Otago constructed the 600 m³ hopper trailer dredger *New Era* designed for work particularly in the Port of Otago. During the 1970s and early 1980s the Port of Tauranga had been undertaking a major reclamation using material from capital dredging, primarily from its own cutter suction dredger but

also with some pump-ashore from trailer dredging contracts. Using the *New Era* as a model of the type of equipment that could be built, the Port compared the option of building and owning a similar dredger, and contracting with the *W.H. Orbell*. This investigation showed that, given a reasonable on-going annual volume and even allowing for the fact that the Port of Timaru had been successful in achieving some reductions in the crewing of the *W.H. Orbell*, ownership was a more economic option than retaining the services of the *W.H. Orbell*.

Since 1959 the Port of Taranaki had owned the 560 m³ trailer suction dredger *Ngamotu*. In the early 1980s this vessel was upgraded, first with new dredging equipment, and then with the replacement of the steam engines with diesel.

In 1983 the Government expressed their concern at the high cost of getting goods from farm to marketplace and began what became known as the "Onshore Costs Study". This study focussed particularly on ports and highlighted the need for structural change within the industry to achieve lower costs and greater efficiency.

Port Companies

In 1984 the Government immediately set about eliminating subsidies wherever they were and freeing up the New Zealand economy from many of the controls that it had traditionally been under. All industries were affected in many ways by the changes and the Government took up the Onshore Costs Study and progressed it vigorously. This eventually led to the formation of Port Companies to manage the commercial port operations and probably had the effect, as far as dredging was concerned, of making all ports more aware of their dredging costs and more receptive to looking at alternative or new means of reducing them.

In 1986 the question arose as to whether it was economic to have three dredgers in New Zealand doing work which could be performed by one or perhaps two of the existing dredgers or by contract. As a result, the ports of Tauranga, Taranaki and Timaru held a meeting at which the idea of carrying out a detailed study into the best option for dredging the three ports in combination was explored. Thus in December 1986 the study into the optimal dredging method for the three ports was initiated in a political and economic environment which encouraged a fresh and more stringently economic approach to dredging policies.

EVALUATION OF DREDGING OPTIONS

The study canvassed the following options:

1. Contract dredging by international companies;
2. Replacement vessel, size of the *W.H. Orbell* (1200 m³);

3. Replacement vessel, size of the *New Era* (900 m3);
4. *W.H. Orbell* in a joint venture; and
5. *Ngamotu* in a joint venture.

Responsibility for the investigation was awarded to Deloitte Haskins & Sells, Financial Consultants, with Becca Carter Hollings & Ferner acting as Engineering Sub-consultants.

Their proposal was to undertake the study in three parts:

- Data collection, port investigations, discussions, creation of financial models.
- Evaluation of the options, using financial and non-financial criteria.
- Establishment of the joint venture, including the selection of vessel, management, industrial considerations.

Stage 2 was completed in April 1987 at a cost of \$65,000. It clearly showed that the operation of a joint venture brought about significant reductions in the total cost of dredging operations at the three ports. Each option was considered by using the "most likely", "maximum", and "minimum" volumes to be dredged as well as three inflation and interest rate scenarios.

The total costs of the joint venture for the period 1988-2000 under each option was established, and after discussions with the engineers from the three participating ports, Option 1 "Contract Dredging" was selected as the most favourable. The total dredging bill for the three ports was slashed by over \$1,000,000 per annum as a result of the change to contract dredging.

THE CONTRACTOR

The contract was awarded to New Zealand Dredging & General Works, which at the time in 1988 was a wholly owned subsidiary of Royal Volker Stevin of The Netherlands. Since 1992 New Zealand Dredging & General Works is owned by WestHam of Sydney, Australia. The contract is for a period of fifteen years with a review every five years.

To execute the work a 1,000 m3 trailer suction split-hopper dredger, *Pelican*, was mobilised from Europe (Figure 2). The *Pelican* is basically stationed in New Zealand but also makes the occasional side trip to Australia. Work for third parties is only undertaken after consultation with the three main client Port Companies.



Figure 2. The *Pelican* is a split-hopper trailing dredger, equipped with a suction installation allowing the dredged spoil to be discharged ashore. The dredge pump has been mounted halfway along the suction pipe enabling the vessel to dredge highly concentrated mixtures at great depths.

THE INTERPORT AGREEMENT AND DREDGING CONTRACT

A contract had to be negotiated which would bind the four parties together. The most practical way to achieve this was for the three ports to formulate an agreement to use a common contractor, and under this Heads of Agreement enter into individual contracts with the dredging contractor for the work at each port.

Heads of Agreement

This document set out the intention of the three ports to employ a common contractor for trailer suction dredging work. It also set out such matters as the establishment of separate contracts, cross-liability, the sharing of establishment costs, refunds, contract intelligence and cooperation in dealing with the programming of dredging and urgent dredging.

Dredging Contracts

Each individual contract between the Port Company and the Dredging Contractor is divided into three parts: Part A, Special Conditions of Contract; Part B, Specification; and Part C, Schedule.

Part A, Special Conditions of Contract

In this part the most significant section is clause 7, Payment, which is commercially sensitive and can therefore not be elaborated upon in depth. Clause 7g is the market fluctuations clause and contains two elements that merit further comment.

The first element is the labour adjustment factor. At the negotiating stages of the contract, the manning for the vessel was not known so the contractor was required to make the initial offer subject to eventual outcomes of the labour negotiations.

The three ports were obviously reluctant to enter into a contract which was open ended in regard to a major cost component. Eventually both sides agreed to share a degree of the risk associated with the labour negotiations. For the purposes of the unit rates in the dredging contract, a nominal manning level was agreed and a notional gang rate reflecting the cost of manning the dredger was calculated.

It was then agreed that any variations to the anticipated manning levels be carried by the ports to a limited extent and thereafter by the dredging contractor. It was also agreed that the maximum variation from the expected cost per crew member that the ports would meet by way of the adjustment to the notional gang rate, and hence the unit rate, would be +/- 15 percent. If the final rate negotiated varied more than this amount, the cost or savings would be borne by the contractor.

Thus at the point of contract negotiations, the maximum risk resulting from labour cost variations was

prescribed and an incentive to the contractor to hold these costs was provided.

The second element worth noting is that after two and a half years of operation of the market fluctuations formula, a re-assessment of the notional gang rate was made from base data and substituted in the formula replacing the value derived by reference to the movement of the wage rate index. This was done to ensure that actual rates are not overly influenced by statistical data not directly related to the operation of a dredger.

Clause 9, The Term of Contract, sets out the procedure for extending the contract beyond the initial period of five years.

Part B, Specification

In Part B the contract details the work to be carried out at each port and specifies an annual volume of dredging that each port has contracted to provide to the dredging company. The rates for this work are specified along with adjustments to be made if the contract volume increases or decreases. The contract allows a port to defer or cancel its dredging, but it must pay a minimum sum to the contractor in so doing.

Sections 5 and 6 of Part B deal with the measure of the work and the planning and control of dredging. Tolerances on minimum areas of dredging are presented as guides.

CONTRACT OPERATION

Dredging Programme Flexibility

Control of the dredging programme essentially lies with the Port Companies and is driven by their needs. The long-term programme of the contractor is reviewed by all parties on a biannual basis where each Port Company's individual forecast of dredging needs is programmed with other work the contractor may have or considers likely together with other requirements such as vessel maintenance.

The Port Companies are able to take advantage of the contractor's ability to be flexible in dredging operations and programming campaigns. This can enable the port to be confidently operated with some tolerance or variation to the port operating parameters, e.g., draught, channel, width, and so on.

There are no physical limits as to the volume dredged each year, therefore each Port Company is able to choose whether to bring forward, defer or combine dredging campaigns to meet their own shipping or cash flow needs. Instead of slavishly following a "clear depth over a clear toeline" concept essential for "one off" contracts, the Port Companies can tailor each dredging campaign and time a campaign for a better



Figure 3. The Pelican at work in the evening, dredging the harbour of Timaru. Dredging takes place 24 hours a day, 6 1/2 days per week.

overall return for the Port. Any urgent or unexpected need for dredging can be accommodated under the contract by a variation to the long-term programme. Co-operative programming between the Ports also enables the cost of mobilisation and demobilisation to be kept to a minimum by minimising the inter-port voyages of the dredger.

Plant Utilisation

By virtue of their co-operation the three Port Companies have:

- eliminated future capital spending on plant for maintenance dredging;
- eliminated a significant part of the operation cost of the dredging.

By employing a contractor with a modern dredger with a capacity matching typical dredging needs the Port Companies do not need to invest in new equipment, keep existing equipment in operation or modify equipment for specific purposes. In the long-term this means that capital potential is able to be utilised for other revenue earning activities.

The benefits to the Port Companies from sharing the contractor's dredger are many:

- The dredging contract is based on working 24 hours per day 6 1/2 days per week.
- Greater plant utilisation by the contractor reflects in lower contract prices.
- Port Companies can do away with maintenance and supervision systems of their own.

- The contractor has broader experience in dealing with different dredging problems.
- "The creation of work" is eliminated.

Human Resources and Industrial Relations

Introduction of a dredging contractor working on a long-term basis on the New Zealand coast necessitated the negotiation of new industrial agreements with the Maritime Union. Existing industrial agreements generally only covered vessels working in their home port. Negotiation of these agreements was not made any easier by the fact that all facets of port operations in New Zealand were undergoing dramatic change at the direction of the Government.

The emergence of the new industrial agreements and the fact that the contractor has now taken over the roll of the employer with all its responsibilities meant that the Port Companies could either free up their own personnel for other duties or reduce their static workforce and management.

By using the contractor's dredger and crew the following benefits are forthcoming:

- Labour costs are reduced in maintenance dredging, reflected through lower unit contract rates.
- A pool of dredging personnel with a greater diversity of dredging experience is established.

Long-term Planning of Operations

The long-term contract enables the contractor to view the employment of the dredger from a more "stable"

Problems which can arise for the Port Companies are:

- digression from the original concept or intent of the actual dredging to any large extent that does not easily fit in with the existing unit rate price structure;
- adopting variations to their own dredging programmes should the contractor obtain other work outside of long-term contracts.

Problems which can arise for the Contractor are:

- logistical problems of short campaigns in personnel and spare parts;
- short-term peaks and troughs can create difficulties in manning the vessel and deploying site staff.

OVERVIEW

Since the implementation of this contract in 1988, the Port of Timaru has dredged 160,000 m³ per annum (Figures 3 and 4), Westgate-Taranaki 120,000 m³ per annum, and Tauranga (Figure 5) approximately 350,000 m³. During 1993 Timaru gained ISO 9002 Certification for a key customer interface, its container yard and freight station area. It was the first port in Australia or New Zealand to do so.

Conclusions

The waterfront reform in the mid-1980s in New Zealand resulted in the privatisation of all the ports in

New Zealand. Port Companies, with a considerably different focus, were established. The need for structural change in the industry became apparent immediately, and in several ports the new approach resulted in a shift from port-owned and -operated dredgers to contract dredging.

In the ports of Tauranga, Taranaki and Timaru this was the case, and this re-appraisal resulted in a contract for a period of fifteen years, with a review every five years.

The contract is now in its eighth year and is without a doubt of great benefit to the three Port Companies. In less than ten years time since the study into the optimal dredging method was made, New Zealand ports have moved from world-ranked laggards to the top echelon of international ports in terms of profitability and performance. They have become customer focussed and flexible. It seems therefore quite likely that a similar arrangement will continue in the future.

References

Deloitte Haskins & Sells.

Financial Evaluation of the Joint Venture Dredging Options. Report for the Ports of Tauranga, Taranaki and Timaru.
June 1987.



Figure 5. The Pelican dredging the approach channel at Tauranga in 1990. Its modest size and high manoeuvrability make the vessel ideally suited for operations in smaller harbours as well as for dredging pipeline and cable trenches in shallow coastal waters.