

New developments in log transport and shipping

Paul D. Christie*

INTRODUCTION

This is it: the sinuous, gritty, and demanding process by which products arrive at the right place, at the right time – and for the right price – has become the “hot” competitive advantage of the 1990s. Logistics and distribution may have been overlooked in the 1980s when product quality held centre stage, but today product delivery holds the key to first-rate business practice.

Logging trucks – those beasts of burden modern commuters love to hate – are just one link in the ‘customer to resource’ chain. It is almost certain that sometime in your travels on New Zealand roads during the next year you will encounter a logging truck. It will loom large – 540 horsepower towering above you or filling your rear vision mirror. As you concentrate on the road it may be hard to imagine that the logging truck you are briefly sharing your journey with is part of one of the nation’s most exciting strategies for growth and survival. In fact every year some 180,000 trucks (just like the one you encountered) have arrived at 11 different New Zealand ports to unload their valuable export cargoes.

Logging trucks are just one link in the customer to resource chain that stretches some 30 million kilometres per year – this is the equivalent of 100 trips to the moon annually. Approximately 5,000,000 cubic metres of logs and an increasing amount of lumber leave New Zealand ports annually, bound for the many and varied processing users and consumers overseas.

THE STATUS OF THE INDUSTRY IN NEW ZEALAND

New Zealand’s manufacturers must make a paradigm shift if industries are going to create additional value for their businesses. They must appreciate that the unit of value today and in the future will be ‘customer relationship’ – not just the product supplied.

Today we are seeing radiata pine coming out of its traditional markets and flourishing where new opportunities are creating enhanced value, through changes in the way customers are served.

The days of simply loading a log ship and dispatching a raw material off to market are rapidly being replaced by a new focus that explores all options to improve margin.

Part of that new focus is the realisation that logistical solutions are an integral part of the total business plan. Logistics dropped its reputation as a boring back-room discipline during Operation Desert Storm. Public imagination was captured as personnel, equipment and weapons were organised – Cable News Network introduced the Western world to the expanding business of logistics.

Logistics is all about collecting and collating information. It is about the proper use of time which leads to savings and profits. In our business we employ logistics to understand the dynamics of the supply chain and the way it serves both our customers and our business. We consistently ask – can we do things better with the correct information? Distribution, closely associated with logistics, deals with product delivery or the execution of the plan.

In reality, New Zealand is not at the centre of the universe but in fact (in distribution speak) a small somewhat inconsequential island country way down the bottom of the South Pacific. Traditionally our industry has not considered in great depth the dynamics of harvest supply. The domestic market always took the lion’s share and the balance went to export. Until recently the industry operated along the lines of – order a truck, keep the cost down and deliver the log (or lumber) to the nearest port for shipment – the customer will take care of the shipping and delivery.

Don’t worry if the product is sapstained or damaged, or that it did not tally quite right at the customer’s door, or it was late and the ship had to wait. Once it was on board FOB (free on board), it was generally someone else’s problem to sort out customer claims and complaints. If it was our fault, we paid the damage and told those thought to be responsible to watch things next shipment.

Until recently, distribution performance, despite its high cost and interface with customers, was never an action near the top of the corporate agenda. It was simply a necessary process by which com-

panies moved goods to customers.

Last year, the New Zealand Forest Industry spent \$350 million delivering its export products to customers.

Could we have done better?

Could we have saved money through better focus on the distribution pipeline?

The answer is clearly a capital YES.

As has been stated earlier, logistics is a ‘hot’ new competitive advantage that works hard to get the right stuff to the right place, at the right time – and for the right price – so simple to say but it is often hard to do. The New Zealand forest industry is open to the new techniques and technologies offered in business logistics, through planning and managing information to create opportunities. Some expert commentators say it’s nothing less than re-engineering the whole economy to enhance supply potential, which in turn creates additional value that will lead to a better standard of living and give rise to new products and work.

THE LOGISTICS MISSION

Logistics is a strategy for growth. It provides the only chance to look at all the transactions from customer back to the manufacturer in a single process.

Logistics requires a new level of expertise that only some New Zealand companies have begun to recognise. It offers businesses the chance to eliminate activities that don’t add value and to review existing practices to remove waste.

The key components of the logistics mission are:

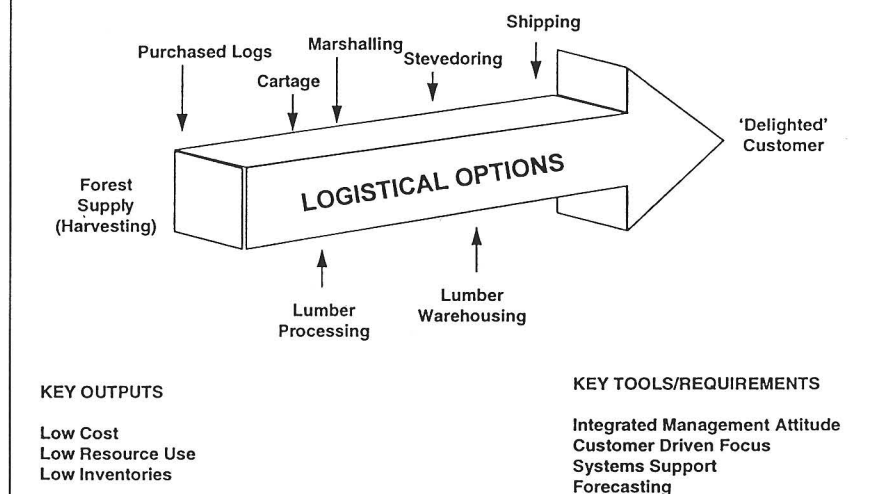
- high customer focus – their perspective;
- low cost – for the service;
- appropriate use of resources – demand versus supply;
- correct inventory management – in the yard or close to the customer;
- good forecasting techniques – volume for shipping options;
- monitoring the activities – electronic commerce;
- management focus and teamwork – communication and commitment to pioneer new ways.

Logistics – Courses to Learn the Competencies

Because New Zealand educational centres have not been asked to, they have never

* General Manager – Distribution, Tasman Forestry

THE LOGISTICAL PIPELINE Customer - Manufacturing



provided extensive logistic and distribution courses. However, as senior management understands the competitive advantages gained from logistics, all this will change.

It is hoped that in recognition of this requirement, Technical Institutes and Universities will plan to provide graduates with the appropriate skills.

COST OF CARTAGE AND SHIPPING

In 1995, New Zealand forestry exporters will again spend around \$US200 million moving their products to their various markets. In the case of export A grade logs going to Japan, trucking and shipping costs could make up a massive 75 per cent of the sale cost (not price).

The percentage of such costs vary according to forest location, piece size, age, volumes shipped, other grades, etc., but as a general rule they are seldom less than 50 per cent of the cost of any sale. The focus within many New Zealand companies is to improve operations, to lower such costs, and to do it without

impacting on the customer.

The question is what is being done to streamline the processes?

NEW DEVELOPMENTS IN TRUCKING

Competition between road options and rail has been a keen topic of interest for some time in New Zealand. Both offer valuable services. Road transport generally is more efficient over the shorter hauls, whereas rail has the advantage over longer distances.

In the not-too-distant future, coastal shipping and barging are also expected to have an impact on long-haul opportunities. Of particular interest are areas where roading or rail permanent way costs are high or where the environmental costs of new roads may be problematical.

Over the last five years, the real cost of trucking has fallen as service providers have responded well to the challenge of the free market. Truck owners and principals clearly see themselves as independent business operators supplying services to a number of companies – this is a dif-

ferent trend from the past.

Such businesses now look closely at their own performance to see what better services and efficiencies they can offer. As a result there has been a much improved alignment with supplying forestry companies and a host of innovations and practices including:

- 24-hour log cartage to ports – more effective use of capital;
- multi-product trucks – log length flexibility and improved utilisation;
- new configurations – flexibility and increased payload, able to carry products other than logs;
- central tyre inflation – less road damage;
- truck safety signs – LIRO code of conduct;
- fewer trucks on the road – greater volume per unit;
- on board computers – analysis of truck performance;
- improved engines – better fuel efficiencies and lower carbon emissions;
- improved communications between service providers and the forestry companies – alignment of goals;
- national associations working together – more effective communication with local government.

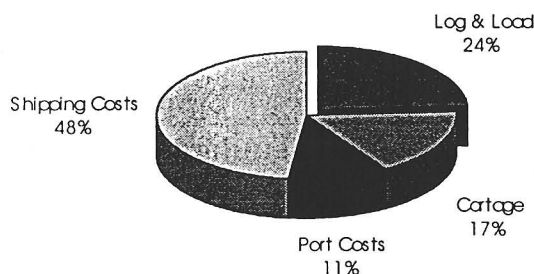
Computer Aided Dispatch

The management of large or small trucking fleets is a significant challenge for trucking and supply companies aiming to improve their effectiveness. Delivering products to the right customer on time, every time, is not a New Zealand hallmark. The development of Computer Aided Dispatch (CAD) systems is designed to assist fleet operators with the task of managing delivery options. Such systems have at their core the solution of various vehicle allocation problems, with multiple tasks and time window constraints. Currently such systems are used by taxis, couriers, community services and freight-forwarding industries. A number of the major forestry companies are monitoring CAD developments to advance applications they could incorporate in their business.

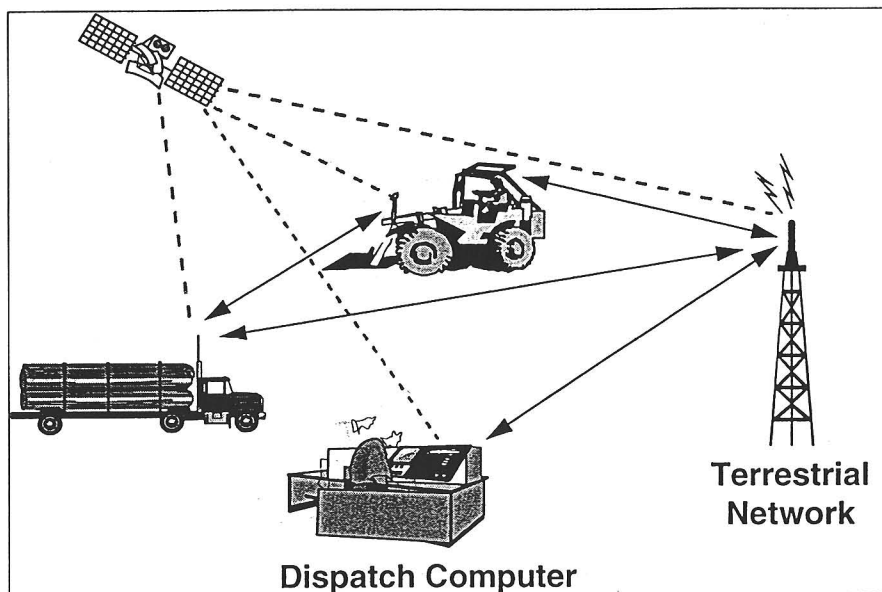
Off-highway Motorways

Supply chain efficiency has necessitated a number of developments in the nation's highways and motorways. Large forest owners have in place over 500 kilometres of off-highway roads; many are linked and servicing major pulp and paper mills and sawmills. Further linking could extend these, and it may be possible to take them through to a port like Tauranga. Such highways would probably be four lanes, privately built and toll operated, with high axle-load capacity.

Japan A Grade - C & F Terms



COMPUTER AIDED DISPATCH (CAD)



—— Present

..... Future

One export interest group has been convened to work with government agencies to explore options relating to improved, safer road design and increased

truck payloads from a gross weight of 44 tonnes to 60 tonnes. The predicted benefits should exceed a net \$50 million per year to the heavy-haul industry, or about

\$30 million to the forestry industry.

Sharing the Highways

New Zealand Forest Owners operate a transport subcommittee to oversee areas of specific interest in relation to new legislation and its predicted impact on the efficiency of operations.

A major concern under discussion is the public's perception of logging trucks on the highways. One survey by the industry indicated that a number of people had their greatest contact with the forest industry through logging trucks seen on the road. As the public perception of these trucks is poor, we need to learn from overseas experience. In other countries, the public exerted considerable pressure on the industry, encouraged restrictions on noise levels and the hours of operation. Our industry therefore needs to be proactive and to work towards showing the public that we can share the country's road network safely, and courteously.

Two initiatives designed to foster this process have recently been completed.

- Signage is being arranged for trucks that clearly displays to the motorist a toll-free number they may call if the truck driver commits an unsafe act or is in some way discourteous. Calls to date register about 60 per cent of com-



Better use of capital resources. Mike Lambert Ltd of Tauranga uses a custom-designed truck to haul logs from central North Island forests to the Port of Tauranga. The same truck then takes back salt to Kawerau for Tasman Pulp and Paper Company Ltd.

plaints, with the balance complimentary. In total, very few complaints are lodged.

- The Forest Industries road transport code of conduct has recently been launched within the service community. Designed by LIRO, it has been developed to ensure that those people involved in providing services to transport forest products understand the importance of projecting and providing professional, safe, and efficient industry to the general public.

The next step is to set up a logging truck driver training scheme that certifies known competencies.

COMPETITIVENESS IN RAIL

NZ rail freight has come a long way in the past five years. Images of laid-back workers and appalling service are now distant memories. Since it was sold to Wisconsin, the company has been charged with improving the efficiencies of their service. Many older flat-bed wagons have been replaced by new generation wagons offering a greater payload. Staffing levels have been reduced significantly and a forestry focus has been established to ensure effective liaison with customers. It is not generally known that Tranz Rail own and manage one of the largest line-haul truck-

ing operations in the country. The company is now at the forefront of the cargo management field. Tranz Rail has made significant investments in their AMICUS electronic freight management system that is designed to offer a total freight management solution. Tranz Rail is clearly targeting forestry as a market segment they intend to see growth in. Already a number of forestry companies are using the services they offer.

NEW DEVELOPMENTS ON THE PORTS

The streamlining of the logistics pipeline is a success story most other countries can only dream about. In the early 1980s, a ship loading logs could be caught in port for up to 14 days; today that same ship loads in three days and is back to sea. The charter rate for a ship varies tremendously according to global supply and demand, but at a typical cost of around \$US9000 per day, savings on freight are valuable. Moreover if the ship sails ahead of time the owner pays the charterer a dispatch bonus as an enticement to get it back to sea. Such costs involve no capital, drop straight to the bottom line and in a sense are the purest form of added value a manufacturer or shipper can ask for.

Exporters and New Zealand port com-

panies recognise that the process of improving efficiency cannot stop, despite the quantum gains made in 1989. Exporters, log-marshalling companies, stevedores, shipowners and port companies are strenuously working to improve operational effectiveness. These developments include:

- computer-aided bar coding of logs at checkpoints;
- computer inventory systems to manage log stocks;
- tear off bar codes at ship side to speed ship loading;
- excavators in ships' holds to improve cargo stow;
- increased and improved log and lumber storage facilities;
- barging facilities being constructed or investigated;
- training off-shore-based personnel in ship-loading techniques;
- new stevedoring and marshalling companies;
- examination of product flows into ports;
- radical new ship designs.

Of the 13 ports around New Zealand's coastline, 11 are involved in log-export activities. Many are located close to a city with local residents already exerting a lot of pressure to restrict truck delivery times,

PORT NELSON LIMITED



Port Nelson is proud to provide the gateway for the Nelson region's timber exports. Last year 343,000 tonnes of logs crossed our wharves. Port development has provided a sealed log storage area, and ongoing development aims to enhance facilities for the Top of the South's log export industry well into the next century.

For details on shipping facilities at Port Nelson call the General Manager on 03 548 2099.

noise and dust. Again it is essential that the industry be pro-active and take all necessary steps to ensure device and facilities are upgraded to reduce the risk of escalation, by reducing or removing the valid concerns of the people involved.

Port Companies

Deregulation forced New Zealand ports to compete with one another on a commercial basis and has resulted in tremendous improvements.

Facilities at many ports have been substantially upgraded and this has improved truck turn around and log marshalling to shipside. However, log exporters remain nervous at the natural monopoly port location can provide. Some port companies and their regional authority boards, charged with making a reasonable return on investment, see the process as an opportunity to build and charge for elaborate facilities with little regard to trade growth. Growth in log exports provides many ports with an excellent cash flow for future development.

The port is a 'toll gate' wherein the nation's produce is accumulated for shipment to market. Therefore it is vital that such costs are held at levels which assist the exporters working from the hinterland to build their businesses, and for new manufacturers to commence exporting. Port companies must continue to assist existing export business through the development of new trade and by working with regional developers to improve port access routes through city centres and to provide new manufacturing zones. A good example is duty-free export trade zones to encourage capital investment. Such developments revitalise trade growth and lift the revenue base, thus reducing inflationary demands on all concerned. It is important port companies understand this wider role to encourage new and local businesses. It is equally important that returns derived from existing export trade do not become excessive and that all options are explored to assist efficiency and reduce cost in real terms. If this does not happen then further reform may be forthcoming to ensure balance.

Competitive Waterfront Services

Waterfront reforms happened in 1989. Today our industry is looking for competitive service providers. An example of improved service is the new company International Stevedoring Operations (ISO). The Waterfront Workers Union is angrily claiming the company will use casual untrained labour to load log ships. They argue that the advent of such a company will threaten their existing benefits. We don't understand this to be the case, as ISO will require permanent employees

and has developed a comprehensive safety programme to ensure the very best ship-loading service.

As exporters, we simply say the work will go to the most cost-efficient service providers. Stevedoring companies and their teams have come a long way, but all, including the Waterfront Union, must adapt to competition if they are to survive and remain employed.

NEW DEVELOPMENTS IN SHIPPING

Until recently, New Zealand log exporters never paid a great deal of attention to the maritime side of the business, despite the fact that shipping is the single largest cost in the customer to resource chain. This year exporters will be spending a whopping great \$US200 million on the 'Blue Water' freight component moving export logs, lumber, pulp and other products to customers overseas.

When the log-export trade first commenced from New Zealand, the 'export pioneers', because of the understandable risk, preferred to allow the Japanese and Korean Trading Houses to arrange the ships. The majority of produce was sold on an FOB (free on board) basis.

Today many companies employ expert shipping personnel to manage operations. Consequently, the selling terms of trade are changing to reflect this greater focus. An increasing number of shipments are being consigned to the customer on C&F (Cost and Freight) terms.

C&F shipping now frees shippers from market segments they don't wish to service; nor do they have to have the purchasing agent take control of products at quayside. It allows the forest grower or manufacturer (those with the necessary scale) to take control of the distribution options that in turn assist production scheduling, offers flexible unloading in other countries, product 'care' and better services for new and existing customers.

Ships controlled by trading houses still remain an essential part in New Zealand's log-selling behaviour. Depending on whom you talk to, commentators are sure they will be around for a long time yet. Frequently such companies have different business objectives from those of the forest grower. The trading house is often a banker and a volume trader of multiple log commodities, whereas the forest grower is endeavouring to produce a range of high-quality log products and to place them into niche markets for the best return. While FOB sales are clearly beneficial for trading companies and were the only way to get the New Zealand trade started, today's companies are realising that to move goods out of the commodity arenas into the more lucrative, more

demanding niches, they must take control of the distribution chain to be effective. To do this is to increase the risk factor, but to an extent this is necessary if change is required. Control also means log and lumber exports can build into their logistical options elements of service such as cargo mix flexibility and country discharge port options that meet the customer needs better and help minimise costs.

Right now global 'Blue Water' freight rates are extremely high, as demand for ships exceeds supply. To make matters worse, it is a reality that the logger shipping fleet is old, with many vessels running well beyond their expected service life. Shipowners are continually talking the charter market up in order to secure a better return for any new buildings they commission. For exporters seeking better returns this means innovative options must be tried in order to mitigate freight impacts.

Exporters realising how difficult it is to beat the Japanese and Korean ship owners at their own game are now working together, cross shipping cargoes for one another when the opportunity suits. Another company is multi product shipping forest produce – logs, lumber, pulp all on the one vessel and concentrating market focus around the disport area.

My own company has been combining logs and coal shipments from Picton and chartering bigger ships for a lower overall freight rate. All options help retain costs at levels lower than they would otherwise have been.

In the future, there will be increasing volumes of value-added products destined for markets in Asia, the Americas and even further afield to countries in Europe. Creating or accessing these different kinds of high-value products will in turn pose a number of new but similar challenges as exporters tend to reduce log exports and seek to substitute them with containers full of products such as kiln-dried lumber, veneer and reconstituted products, furniture and various other high-value items. They will seek to get them there free of damage and on regular 'just in time' schedules. Logs will always be a valuable product to the industry, because saw-millers in other countries will want them as raw material. Raw logs can be expected to reduce and be replaced by lumber and other products, and this in turn will mean new ship designs and cargo-handling requirements will be initiated to get the goods across the oceans of the world. New Zealand processors are rapidly bringing on line local value-adding process options and this means the common round-hold log ship in service for today's trade – dry bulk vessels – will probably need to be replaced with square hatch-square hold

ships. This new design will take logs and also square lumber packs, square pulp packs, containers and other similarly stowed forest products.

Such ships already exist but have been very few in number, tend to be expensive and are often quite specialised with overhead gantry cranes – not log cranes. Currently it is difficult for individual exporters to produce enough cargo to fill such large vessels, but the practice will become more common as the concept of multi-product shipping expands. As the new logistical option, multi-product aggregation, is increasingly practised, both customer need and market strategy will be enhanced. Already shipowners seek square-hold ships, as they offer an advantage and some are already under construction at this time.

Just as truck design has progressed, ship design can be expected to develop. Cargo sizes, where scale permits, will have to get bigger to achieve cost-efficient rates. Generally it is understood that the bigger the ship and the cargo, the lower the unit freight rate. Where scale is not easily achievable, combination on existing dry bulk ships will continue or cargoes of logs and lumber will continue to be shipped under Liner terms. Such services to Asia, Europe and the United States of America are well established and provide

regular shipment services between fixed ports at fixed times. The service is generally more expensive than bulk shipping but does provide exporters with a reliable service they can count on if small consignments better suit their customers (e.g. just-in-time inventory management) or their business size. Liner service operators don't generally ship logs because of the damage they can cause to the type of ships used; however, at times high-quality pruned logs, anti-sapstain treated and bundled on to pallets, have been shipped into markets like Singapore for development purposes.

Another new development in its very early stages is the delivery of goods into the store or yard of overseas customers, so they as receivers don't have to be concerned with any aspect of the delivery supply line. They simply pay on receipt of goods at factory wholesale or retail outlet.

CONCLUSION

Logistics and distribution will provide a cutting edge to new developments in log transport and shipping in New Zealand and throughout the world. It is not enough to simply supply the customers; our customers must be totally satisfied with the products they receive. Cooperative customers will be served by companies that

have realised the transport and shipping industry must continue to welcome innovative change and that moving products requires state-of-the-art technology and a commitment to 'customer relationship'.

BIBLIOGRAPHY

- Christie, P. 1991. A look at key features of a major multifaceted logging operation.
- Christie, P. 1993. Optimising transport efficiency for competitive advantage. The Transport Interface.
- Collins, P., and R. Renolds. 1995. Re-engineering a European supply-chain. Logistics Focus. March 1995:2.
- Dickson, L. 1995. International stevedoring operations. Speech to Tasman Forestry staff, April 4, 1995.
- Forestry Transport 2000. 1994. LIRO seminar. Wellington. July, 1994.
- Henderson Consultants 1993. Business logistics paper senior management school. July, 1993.
- Henkoff, R. 1994. Delivering. Fortune. November 1994:34.
- Jacob, R. 1994. Why some customers are more equal than others. Fortune. September, 1994: 149.
- Osborne, B. 1994. NZLGA and NZFOA forestry seminar, Hamilton, October 7, 1994.
- Reed, M. 1995. Retailing – change at the checkout. The Economist. March, 1995.

HUSKY

A Peek company.

Husky FS/2 - the new dimension in rugged handheld computing.

With its unique, one-handed operation and rugged construction, the Husky FS/2 puts the power of MS-DOS computing into the most demanding work situations. Designed for numeric intensive applications, it is the perfect counterpart to the high performance text-handling power of the Husky Hunter range.

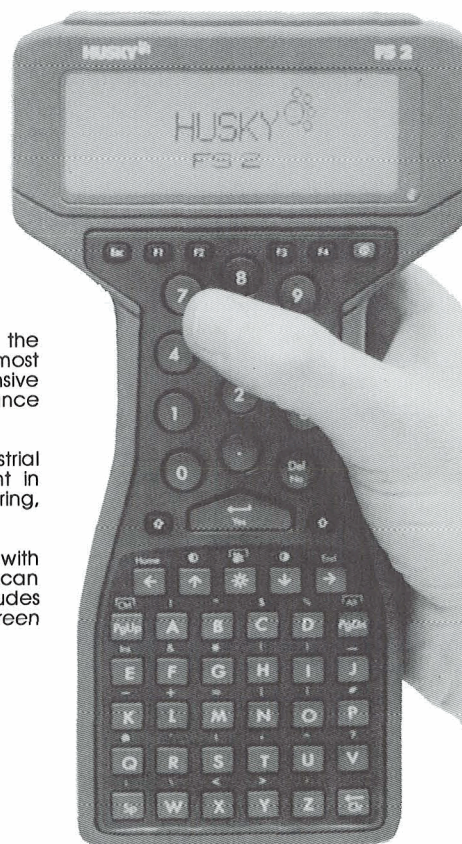
The Husky FS/2 is perfectly adapted to outdoor and industrial applications, where users need complete freedom of movement in difficult working conditions from meter reading, field service engineering, surveying and forestry to quality inspection and warehousing.

The Husky FS/2 sits comfortably and securely in the palm of a hand, with a full numeric keypad at the user's fingertips. At just 750 g (26oz), it can easily be clipped to a belt or carried on a wrist strap. The unit includes separate alpha and numeric keypads, and its backlit LCD screen provides a full 8 x 40 character display.

Unilink

UNILINK AUTOMATION LIMITED

15 Olive Road, Penrose, PO Box 12-142, Auckland
Telephone: 64-9-5257002 Facsimile: 64-9-5257011



The computer you will want to hold