

FIRST ISSUE

ARROWHEAD

OCTOBER 1954



Message from Sir James

I think I can truthfully say that we have been considering establishing a house magazine for a number of years. We were sure that the idea was a good one but we wanted the magazine to be a good one too: we didn't want to go off half-cock or to launch it when the tide was not properly in.

Now that we have re-organised our companies and simplified the structure of the group we believe the time is ripe and opportune. Because the Editors' job will be to make it interesting and readable I may not be asked for many more contributions, and I just want to set down briefly here why I feel this magazine is so necessary and important. Up until 1940 when Fletchers was still a family business, my late brothers and I and our Managers prided ourselves that we knew almost everyone in our employ, and not just by their christian names. As the Company expanded it has become more difficult to know all our people as well as we used to, but I believe that friendly and personal atmosphere still exists under the stewardship of son Jim, our Managing Director. The magazine will help to strengthen those friendly relationships.

As I see it *Arrowhead* should be telling the staff where we are going as a Company — telling the boys in Southland what the boys in Whangarei are doing; it should tell our clients, suppliers and associates something about what we make and build and how we do it. Above all it should be interesting, factual and informative to every reader.

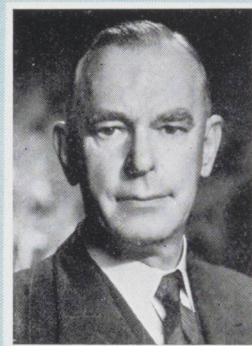
I wish *Arrowhead* every success and hope that you will come to like it and look forward to reading every issue.

James Fletcher

FLETCHER HOLDINGS LIMITED
Chairman of Directors



MR. J. C. FLETCHER
Managing Director



MR. L. J. STEVENS
Deputy-Chairman of Directors

ARROWHEAD

VOL. I No. 1

OCT. 1954

Published every
two months by

FLETCHER HOLDINGS LIMITED

Auckland, New Zealand

on behalf of its
subsidiary companies

The Fletcher Construction Company
Limited

★

The Fletcher Steel and Engineering
Companies Limited

★

The Fletcher Timber Company Limited

★

The Fletcher Industries

★

The Fletcher Sales and Services Limited

★

The Fletcher Plant Hire Company

★

The Fletcher Trust and Investment
Company Limited

★

Front Cover

An aerial photograph
of the new TASMAN
plant at Kawerau
See back cover story

Printed by Abel Dykes Ltd.,
Lorne St., Auckland, N.Z.

"it's your baby"

The first appearance of this magazine is very like the birth of an infant, except that its arrival is a complete surprise to the public, and to a certain extent, to its publishers as well.

The simile fits snugly in other respects. Now that it's born, "What are we going to call it?" Choosing a name is a problem of how to be different without being eccentric. We didn't want another *Tom*, *Dick*, or *Harry*, but we were loath to father a high-sounding *Minerva*, or a strictly technical name like *Construction*. Having decided upon *Arrowhead* puts us in the position of parents plagued with second thoughts after coming up against the stock retort of friends and relations, "Why did you call it THAT?"

Our title has a significance that has to be explained. It stands for Fletcher, and a fletcher, in good Anglo-Saxon English, means simply "a manufacturer of arrows." To make sure of our facts we looked it up. Our dictionary quotes "The bowers, fletchers and arrowe head makers of this your realme" from Henry VIII. But whether it conjures pictures of Agincourt or Arizona, William Tell or One Tree Hill we think you'll agree that as a title it's got something.

Arrowhead is a clean symbol of speed and defined objective—a target with a bullseye. We think that Fletcher's swift progress and steady aim deserve such a title. So *Arrowhead* it is, and if you have any comments to make you are invited to use the column provided. We shall call it "Slings and Arrows."

Parents and publishers have something else in common — they both think their baby is the best and most important of the millions that have gone before. We, for our part, will refrain from parental pride, but like a good father will try to bring up the young hopeful to be honest and straightforward — interesting and entertaining — in short, to be good company.

Arrowhead is first and foremost a staff magazine, and not a publication to advertise Fletcher products and services. There will be many articles about construction projects, materials, and methods because we believe it is of interest to read about what the organisation is doing and to see what we as a team are achieving month by month. We want staff members to regard this as their forum. Their literary contributions are invited; in fact it will largely depend on them to keep our pages full.

There are two dangers that a magazine of this kind can run into: it can become a vehicle for propaganda, or a backyard of private gossip. No one wants to be told that our organisation is the biggest and best, and few want to learn that the Nightcaps branch manager has been visiting his sister in Tongaporutū. The aim is to steer a course between these two forms of dullness. There will be space for trumpet blowing, and space for "Hatched and Matched", but the test of the magazine will be its main readable content and its universal popularity.

This is your baby as well as ours. Help us to feed it — and to change it too, if it does too often what babies are wont to do.

The Editors.

now we are seven



When you can't see the wood for trees its time to start pruning — particularly if this applies to an orchard where trees are grown for what they can yield in annual crops.

The Fletcher group with more than twenty subsidiary companies and intertwining responsibilities was becoming something like a big tree which, growing taller and broader every year, needed a simplification of its branch structure. So pruning became the order of the day.

Fletchers will emerge bigger, stronger and more fruitful as a result of the re-organisation aimed at eliminating superfluous wood which could have impeded development.

That briefly is why over twenty many sized subsidiaries are being disentangled and merged into seven clear-cut companies. When the clippings have been swept away, the family tree will be easier to look at and better for everyone — inside and outside the organisation — to comprehend.

At the top of the tree is the Board of Fletcher Holdings Limited, chaired by Sir James Fletcher. Next in the line of control comes the Executive Committee of six full-time officers appointed by the Board to look after the operations of the seven subsidiary companies. Two Directors on the main Board — J. C. and J. S. Fletcher, are members of the Executive Committee.

The Fletcher family of companies now consists of seven:—

- The Fletcher Construction Company Limited
- The Fletcher Steel & Engineering Companies Limited
- The Fletcher Timber Company Limited
- The Fletcher Sales & Services Limited
- The Fletcher Trust and Investment Company Limited
- The Fletcher Industries
- The Fletcher Plant Hire Company

Each of the seven companies has a Managing Director appointed from the Executive Committee who will be responsible for its overall activities, and General or Joint General Managers have been appointed to control their day-to-day operations.

Each subsidiary has its own board of directors presided over by J. C. Fletcher, who is Chairman of Directors of each company. In addition to the Managing Director and some members of the Executive Committee, in many cases top managers will also be on the boards of their respective companies. H. F. Molony, Secretary of Fletcher Holdings will sit also on each of the seven boards in the capacity of financial director.

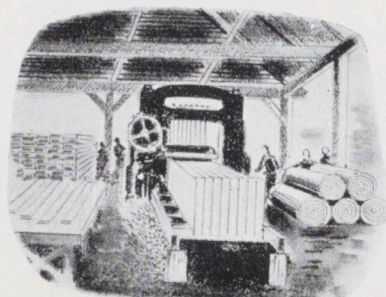
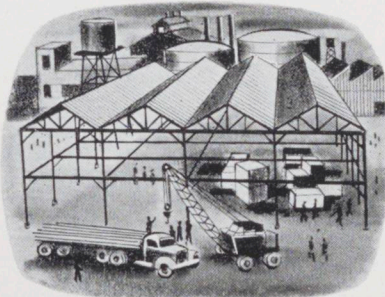
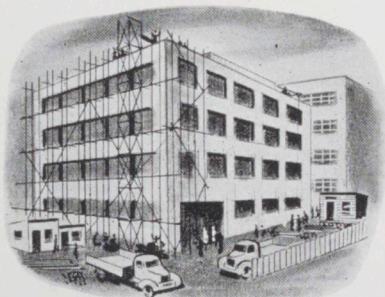
Even when we had a whole host of subsidiaries they worked closely together. However, the new set-up has streamlined our organisation and on the one hand has concentrated those working in similar fields and on the other hand has more clearly drawn the line of demarcation between them.

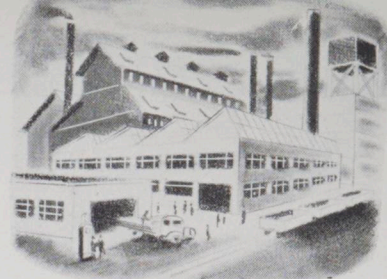
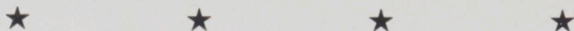
The re-organisation has brought about numerous changes which affect the names and functions of the companies rather than the people who work for them.

Now that Fletcher Construction has taken over the responsibility for housing construction we have had to say farewell to Residential Construction Company Limited, which was formed in 1939 explicitly for building State rental houses. It is worth recording that before the war our company, with the assistance of a panel of architects, builders and technicians, prepared the first four hundred plans for the Government's State Housing scheme.

"Residential's" activities were not entirely restricted to housing; it operated joinery factories and timber yards and even had a hand in our expanding builders' supply and hardware business. Now its housing work has been brought under Fletcher Construction's Housing Division; its timber merchandising business has been passed over to Fletcher Timber as also has the control of all our joinery factories previously run by both Residential and Fletcher Construction; the builders' supplies are now covered by the new company — The Fletcher Sales & Services Limited.

Fletcher Construction now has four principal divisions — Commercial, Housing, Heavy Construction and Industrial Consulting. The first two require no further explanation — they are in effect the old Fletcher Construction and Residential Construction respectively.





The Heavy Construction Division is new and has been set up to take charge of jobs like the Import Wharf in Auckland. It expects to tackle marine work, bridges, tunnels and major construction projects.

The Industrial Consulting Division has really been with us in spirit at least, for many years. We have always been able and glad to offer engineering, design and general advisory services to clients on a whole range of problems connected with construction and development. We have our own engineering and design office: we have officers experienced in finance, taxation, land transactions, factory planning and materials handling. With the establishment of the Industrial Consulting Division, these services have now been put on a substantive basis. This new Division is already engaged on a complete design for both buildings and plant for a new cement factory in the South Island. It will provide a "key in the door" service for clients so that the owner takes over when the button to commence production is wired and ready to be pushed.

The insulation and acoustics section of Fletcher Construction will still remain within that Company's control.

Our steel and engineering companies in the four centres have worked closely together for a number of years particularly on buying and stock distribution. Well-known names like Vulcan, Stevenson & Cook and Joseph Sparrow will be merged under the one title of The Fletcher Steel & Engineering Companies Limited. The re-organisation of this side of our business has not been very complicated and apart from the new name and the promotion of some of the leading personalities, few noticeable changes have been made.

The new title, Fletcher Timber, replaces the old Te Puke Sawmills Company, whose name was a confusing misnomer. It was a small timber company which we purchased in 1943 and managed first from Auckland and subsequently Rotorua for acquiring bush areas and for sawmilling. In our time it never operated within a bull's roar of Te Puke township.

Fletcher Timber has now become one of the largest owners of native forests in New Zealand and with its newly added interests in joinery manufacturing and

timber merchandising it is now a very substantial unit in the group.

A new combined manufacturing company, to be known as The Fletcher Industries Limited, and to take over all our existing manufacturing units is yet to be formed and registered. It will take over Duroid Products Limited at Onehunga, N.Z. Plywood Limited at Penrose, the Asbestos-Cement Division of Dominion Industries Limited at Christchurch, The N.Z. Marble Company in Fanshawe Street, Auckland, as well as our door factory in Wellington.

N.Z. Plywood (S.I.) Limited at Christchurch is owned jointly with the Kauri Timber Company Limited, and is not affected by the re-organisation.

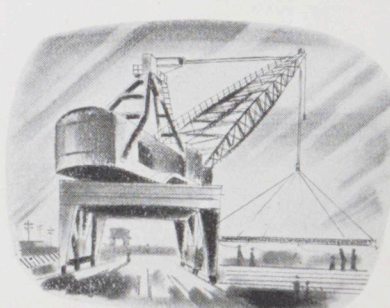
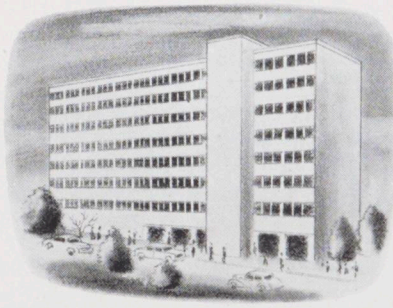
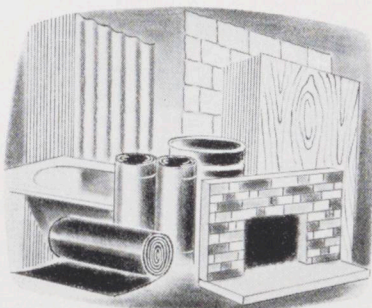
An announcement has already been made that the Linseed Division of Dominion Industries Limited will shortly cease operations, and it is with some regret that we cannot include it in our list of interests.


The distribution of our own manufactured products was previously done by Dominion Sales Corporation, a separate entity from the individual manufacturing units, and following modern trends it has been decided to attach the distributing organisation to Fletcher Industries, thus linking makers and sellers more closely together.

The distribution of our own manufactured products through Fletcher Industries is not to be confused with the field of the other new company — The Fletcher Sales & Services Limited, one of the "babies" of the group. Fletcher Sales & Services will certainly sell our own products on the same terms as do other merchants, but generally speaking they will supply builders' requirements, hardware and other services to the trade and the public. This new company which has expanded rapidly in the North Island particularly, began in a small way with our builders' supply service at Penrose; further extensions are planned in other parts of New Zealand.

The sixth of the seven subsidiaries will be an entirely new departure altogether. The Fletcher Group has accumulated a great deal of fixed and mobile plant for both construction and production purposes.

(Concluded on Page 13)





Who's who at Fletchers

The company has not grown all that big that we have got to wear numbered buttons for identification purposes, but the reorganisation has made some changes — some new jobs with old faces in them, some new faces in old jobs and even some new faces in new jobs altogether. For the staff, this 'Who's Who' will remind you what they all look like; to our friends and associates it will be something of a directory.

FLETCHER HOLDINGS LIMITED

The Holding Company which controls the seven subsidiaries is governed by a Board of Directors whose chairman is Sir James Fletcher and whose Deputy Chairman is Mr. L. J. Stevens. Mr. J. C. Fletcher is Managing-Director and other Directors on the Board are Messrs. E. H. Rhodes, J. T. Martin, J. S. Fletcher, A. C. Isaacs and J. E. R. Crooks.

THE FLETCHER CONSTRUCTION COMPANY LIMITED

MANAGING DIRECTOR : J. J. CRAIG . . .

SECRETARY: R. T. ARKLEY, WELLINGTON
ASSISTANT TO MANAGING DIRECTOR: I. D.
McALLISTER.



E. L. YOUNG

GENERAL MANAGER COMMERCIAL DIVISION

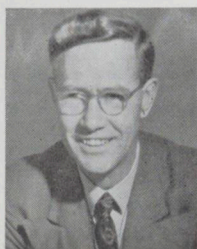
E. L. Young began his apprenticeship with the company in Wellington in 1922. He was sent to Napier in 1931 after the earthquake, and returned to Wellington in 1935 as a foreman. He was the first Manager of the new Dunedin branch formed in 1944. In 1950 he was transferred to Australia as Manager and returned to New Zealand in 1953 when he was stationed at Kawerau prior to taking up his present position.



H. L. PARKER

GENERAL MANAGER HOUSING DIVISION

H. L. Parker joined us as a foreman in Wellington in 1937 and became Housing Supervisor in that city in 1944. He was later put in charge of our construction work at Waiouru Military Camp. He returned to Wellington in 1950 to manage Residential Construction, a position which he held until he took up his new responsibilities.



J. S. WATT

GENERAL MANAGER INDUSTRIAL CONSULTING DIVISION

J. S. Watt came to us in 1953 from I.C.I. where he had held many important executive posts in U.K., New Zealand and Australia. Before setting up our Industrial Consulting Division he acted as Technical Advisor on Plywood and Duroid. Dr. Watt was a New Zealand Rhodes Scholar and holds a Master of Science degree as well as a Doctorate from Oxford University.

HEAVY CONSTRUCTION

No General Manager has yet been appointed to this Division. Its activities are meanwhile under the control of J. J. Craig and W. A. Bourke.

BRANCH EXECUTIVES

AUCKLAND

S. J. Jack, Manager Commercial Division.

W. T. Anderson, Manager Housing Division.

L. J. Wilson, Chief Quantity Surveyor.

W. H. Carlyle, Manager Acoustics Division.

WELLINGTON

J. C. Watt, Manager Commercial Division.

W. T. Clayton, Chief Quantity Surveyor.

CHRISTCHURCH

R. W. Berry, Manager.

DUNEDIN

A. J. Lennox, Manager.

NORTHLAND

D. R. Blaikie, Manager.

INVERCARGILL

G. A. Bourke, Manager.

HAMILTON

R. N. Tod, Manager.

KAWERAU

J. Bourke, Manager.

THE FLETCHER STEEL & ENGINEERING COMPANIES LIMITED

MANAGING DIRECTOR : A. W. CRAIG . . .

SECRETARY : K. H. KENNY AUCKLAND

LOCAL MANAGERS

AUCKLAND J. Lothian

WELLINGTON E. G. Fleming

CHRISTCHURCH A. R. King

DUNEDIN R. J. Maindonald

PORT CHALMERS G. J. Bootten

GENERAL MANAGER

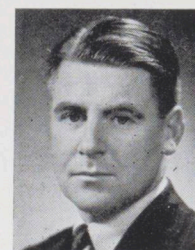
S. P. Kingston started with us as an apprentice boilermaker in 1922 and has climbed every step of the promotion ladder at Vulcan Steel, becoming Manager in 1944, a position which he held until he was recently appointed as General Manager over all our steel and engineering interests.



S. P. KINGSTON

ASSISTANT GENERAL MANAGER

C. J. Maindonald joined the company in 1946 as Engineer to the asbestos-cement factory in Christchurch, subsequently becoming Manager of that company. He was later appointed a Manager of Joseph Sparrow's works in Dunedin and Stevenson and Cook, Port Chalmers.



C. J. MAINDONALD

THE FLETCHER TIMBER COMPANY LIMITED

MANAGING DIRECTOR : W. A. BOURKE

SECRETARY : W. N. ROWE ROTORUA

GENERAL MANAGER

J. L. Hahn resigned from the position of Logging Officer for the Forest Service at Rotorua to become a Manager of Te Puke Sawmills Limited in 1949. He held that position up until the time he was appointed General Manager of Fletcher Timber.



J. L. HAHN

ASSISTANT GENERAL MANAGER

A. T. Jewell joined Te Puke Sawmills as Accountant in 1951. Before that he was for eighteen years in the Forest Service, and at the time of his resignation was Timber Sales Officer. He is now Assistant Manager of Fletcher Timber.



A. T. JEWELL

LOCAL MANAGERS

AUCKLAND D. B. G. Sutcliffe

WELLINGTON L. J. Cowper

South Island Branch appointments will be made later.

THE FLETCHER INDUSTRIES

MANAGING DIRECTOR : J. S. FLETCHER

SECRETARY : C. M. GURR CHRISTCHURCH



T. C. B. COOPER



W. G. WEIGHT



P. M. MUSKETT

JOINT GENERAL MANAGER

T. C. B. Cooper joined Dominion Industries in 1946 as a mechanical draughtsman, from the New Zealand Railways. In 1950 he was made Chief Engineer of Dominion Industries and New Zealand Plywood (South Island), becoming Manager of the latter company in 1951.

JOINT GENERAL MANAGER

W. G. Weight joined Dominion Industries' Linseed Division in 1947 as a factory supervisor and subsequently became Manager of the plant. Mr. Weight has had a long experience in the paint industry in India and the United Kingdom.

GENERAL SALES MANAGER

P. M. Muskett joined Dominion Sales Corporation in 1944 as Branch Manager at Wellington. He came to us from the firm of C. & A. Odlin. Later he became General Manager of Dominion Sales Corporation stationed in Auckland, and is now General Sales Manager of Fletcher Industries.

FACTORY MANAGERS

ABESTOS-CEMENT, Christchurch,	E. Adams
DOOR AND CORESTOCK, Wellington,	K. R. Goddard
PLYWOOD, Auckland,	R. F. Leighton
DUROID, Auckland,	A. E. Trenwith
MARBLE, Auckland,	J. H. D. Redpath

SALES MANAGERS

AUCKLAND	W. C. Phillips
WELLINGTON	J. W. Neale
CHRISTCHURCH	} Appointments pending
DUNEDIN	

THE FLETCHER PLANT HIRE COMPANY

This company has not yet been registered nor have any permanent appointments been made. Its proposed field of operations are at present being handled by P. A. M. Brookfield, Auckland Engineering Manager.

THE FLETCHER TRUST AND INVESTMENT COMPANY LIMITED

At the present time this company has no General Manager or Branch Managers and is administered by J. C. Fletcher, Managing Director of Fletcher Holdings Limited, and K. H. Kenny, Secretary to the Company and Head Office Accountant.

THE FLETCHER SALES & SERVICES LIMITED

MANAGING DIRECTOR : W. A. BOURKE

SECRETARY : T. W. H. HOBBS AUCKLAND

GENERAL MANAGER

F. Brown joined Residential Construction as Hardware Manager in Hamilton in 1950 and became Manager of our Builders Hardware Division in 1953. He was appointed General Manager of Fletcher Sales and Services under the recent re-organisation.



LOCAL MANAGERS

AUCKLAND L. S. Northmore

HAMILTON M. H. Rowe

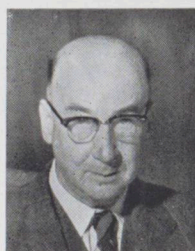
PALMERSTON NORTH N. A. Dalley

WELLINGTON P. L. Kearney

South Island appointments will be announced later.

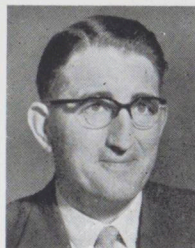
SPECIAL EXECUTIVE OFFICERS

CHIEF DESIGNING ENGINEER



R. Falck, Chief Designing Engineer and in charge of the engineering and drafting office in Auckland, was a Civil Engineer in Vienna up till the time he joined us in 1939.

CHIEF PURCHASING AGENT



K. E. F. Grenney, Chief Purchasing Agent, was with Turner Asbestos Cement Company in London prior to joining us in New Zealand as a salesman in 1947. Before taking up his present appointment he had been Sales Manager for Dominion Sales Corporation in each of the four centres.

ASSISTANT TO MANAGING DIRECTOR



K. G. Fraser, Assistant to the Managing Director, joined Fletchers in 1950 in Auckland. He came to us from Government service, and his special responsibilities are on industrial relations, research and public relations.



J. C. FLETCHER

J. C. Fletcher joined Fletcher Construction from the South British Insurance Company in 1937. His first post was Accountant for the Construction Company in Auckland and he subsequently became Secretary of that Company in 1938. In 1940 he was appointed Secretary of the newly formed holding company, Fletcher Holdings Limited. He was made a Director of the holding company in 1942 and appointed Managing Director in the same year; a position which he has held ever since.

EXECUTIVE COMMITTEE

This Committee has been appointed by the Board of Fletcher Holdings Limited to carry out the Board's policy. The Committee consists of J. C. Fletcher (Chairman), H. F. Molony, Secretary of Fletcher Holdings Limited and J. J. Craig, J. S. Fletcher, A. W. Craig and W. A. Bourke. A member of the Executive Committee has been appointed as Managing Director of each subsidiary company and in some cases other members of the Executive Committee also serve on the Boards. J. C. Fletcher and H. F. Molony by virtue of their special functions are members of the Board of all seven subsidiaries.



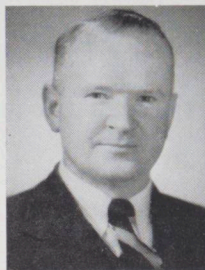
W. A. BOURKE

W. A. Bourke came straight from college in 1934 to join the New Zealand Marble Company as a measurer. He became a Manager of that company and after the war managed the Duroid factory at Onehunga. In 1947 he was made Manager of Residential Construction in Auckland. He is now Managing Director of Fletcher Timber and Fletcher Sales and Services and also has an interest in the heavy construction side of the business.



H. F. MOLONY

H. F. Molony left the Shell Company to join us as Branch Accountant in Wellington in 1943. He was appointed Assistant Secretary and Chief Accountant in Auckland in 1945 and became Secretary of the Company on the death of G. F. Hutchinson in 1952.



J. J. CRAIG

J. J. Craig was a carpenter when he joined the company in Wellington in 1928. He was appointed foreman in charge of the Wellington Railway Station job and later became Manager of Fletcher Construction in Wellington. For a number of years he has been Fletchers' Senior Representative in Wellington and is now Managing Director of the Fletcher Construction Company Limited.



J. S. FLETCHER

J. S. Fletcher joined the Wellington branch of Fletcher Construction as a clerk in 1935 after a period with a firm of public accountants. He became Accountant to the Housing Division which was later formed into Residential Construction. He was appointed a Director of the Holding Company in 1942 and made Managing Director of Dominion Industries Limited in 1943. For some years he has been Director in Charge of Fletchers' South Island interests. He will be Managing Director of Fletcher Industries Limited when this company has been formed.



A. W. CRAIG

A. W. Craig joined the company as a carpenter in 1925 becoming a leading hand, foreman, supervisor and then joinery factory manager, all in Wellington. In 1950 he was appointed to Auckland as Manager of Fletcher Construction. He is now Managing Director of the Fletcher Steel and Engineering Companies Limited.

A 'STICKY' Problem



The scientific jargon of the chemists of the plywood industry can be frightening to the layman. Such terms as phenol-formaldehyde and urea smack of the sorcerer's apprentice, or even the sorcerer himself. We would not say that these terms and processes are simple to explain, but we hope this article, contributed by Dr. J. S. Watt of the Industrial Consulting Division, will help the layman to a better understanding of the glues and the bonding of plywood.

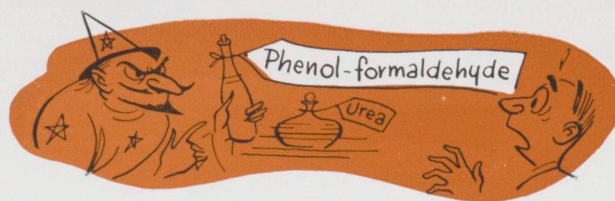
Plywood began its industrial career when it was discovered that the inherent weakness of wood across the grain could be largely overcome by cementing thin layers of wood at right angles between two outer layers of similar thickness. It was also discovered that thin strips of wood seasoned more quickly, and this led to the development, first of sawn veneer, then sliced veneer, and finally to the rotary-cut veneer which is the main basis of the plywood industry today.



There was however the problem of finding a suitable glue or bonding material which would not be affected by moisture and would permit the use of plywood to be extended from a limited use indoors under cover so that it could be exposed to weather and moisture without damage.

Until shortly before the first World War, plywood glues were of animal or vegetable origin. They were made from hooves, horns, and hides, or from skim milk or vegetables like casein and starches. All these materials act through their ability to dissolve in or absorb water to give a fluid material which can be easily spread on the wood and which, under heat or pressure, or both, can be made to give up this water and return to a solid state. The chemical structure of the glue is not altered, and the change is purely the physical one of removing the water.

When plywood with organic glues is exposed to water the reverse action will occur: water will be absorbed, a liquid or semi-liquid will be produced, and the joint will lose its strength.



Everyone is familiar with the result — an unsightly mess of twisted plies, often stained with mould — when plywood meant for interior use only has been exposed to the weather. Plywood sometimes comes under unfair criticism because a material made purely for internal use reacts badly in damp or wet conditions.

This problem led to intensive work by chemists to develop glues which would resist moisture either by producing a chemical change in the old glues so as to make them water-insoluble, or by the development of entirely new adhesives.

No great success was obtained by the former method, but about 1912 the historical discovery by Dr. Baekeland (of Bakelite fame) of the *phenol-formaldehyde* resins opened up a new era for plywood manufacture. He discovered that *formaldehyde*, a simple chemical well known as a fumigant, would react with phenol (carbolic acid) or similar chemicals to produce materials which ranged from water-soluble and relatively simple chemicals to complicated resins, quite insoluble in water which could not be melted or fused before carbonising.

The suggestion by Dr. Baekeland that these compounds could be used as wood adhesives started a train of research which, some sixteen years later, resulted in the marketing of the first successful adhesive film. This film was used by interposing a layer between alternate plies of veneer and pressing in hot presses. The resin first melted and then set by a chemical change into a solid which cemented the veneers into the sheet of undressed plywood.

Since then, further development resulted in the placing on the market of resin solutions which can be applied in ordinary mechanical glue-spreaders. Here the crossbands (used for building up of plywood) are coated on both sides by passing through rolls rotating in a bath of adhesive. These coated crossbands are then laid between lengths of veneer and pressed into plywood and the chemical change produces an insoluble, infusible cement.

This, then, was the turning point in the history of plywood. From the restricted uses caused by inadequate bonding agents, plywood emerges as an all-purpose and most versatile wood product. Prolonged exposure to cold or boiling water has no effect on the glue line of exterior plywoods, and the severest weathering tests fail to disintegrate the bond. In fact, disintegration of the wood will occur before the glue itself fails, whereas previously only a few hours immersion in cold water caused delamination of plywood made with the old type of animal or vegetable glue. Tests have been reported from Canada in which resin-bonded plywood was intermittently boiled for two years without glue failure. Tests under similar conditions have been carried out in New Zealand for periods of several weeks and, at the end of that time, the glue joint was still intact, although considerable breakdown of the wood surface was occurring.

Following on the development of the *phenol-formaldehyde* (P.F.) adhesives, research on the use of similar "thermo-setting" resins was undertaken and resins such as *urea-formaldehyde* (U.F.) and *melamine-formaldehyde* evolved. Today there are a number of these resins available to the plywood manufacturer, and while none of them is superior in water-resistance to the phenol resins (urea resins are definitely inferior in this respect), the U.F. resins have another property which is very important for decorative work, and that is the almost complete absence of wood staining, which is a major drawback of the P.F. resins.



In recent years, therefore, the tendency has been for U.F. resins to be used for the manufacture of interior grades and P.F. resins for exterior grades, while *malamine-formaldehyde* resins (M.F.), which are more expensive than the others, find restricted uses where both high water-resistance and protection from stain are required.

In spite of the big advances made recently by the synthetics, there is still a great deal of interior plywood made with such natural bonding agents as casein, blood

albumen, and soya bean glue. Because the natural glues are lower in cost, and greater tolerance in manufacturing conditions is possible than with the synthetics, it is obvious that there are advantages in using these glues provided that the limitations of the plywood made with them are fully realised both by those who use the product, and also by distributors and retailers in preventing it from getting wet during storage and transport.

now we are seven

(Concluded from Page 5)

It is intended that a new company, to be called The Fletcher Plant Hire Company Limited, will be formed to take over responsibility for all this plant. Its domestic function will be to control the purchasing, maintenance and replacement of equipment, but we also have another aim in view: to make available to other builders mobile machines such as earth-moving vehicles, grabs and cranes, which at the time are not being used by the construction company. Fuller details of these proposals will be announced later.

The last of the seven is The Fletcher Trust and Investment Company Limited which has controlled many of our properties and investments and will now take control of them all. Fletcher's largest outside investment is in the Tasman Pulp and Paper Company Limited, in which we will have one million shares; we are also investing £150,000 in the new tissue mill plant to be built at Kawerau, and known as Caxton Paper Mills Limited.

Purchasing Division

Up until recently it was the general rule each individual company made its own purchases of raw materials and supplies. Looked at from the point of view of the individual company, whether in construction or manufacturing, some of these purchases may not have appeared large, but together they are considerable and in future all buying for all the subsidiary companies will be done through the Purchasing Division, whose head office is at Penrose. The Purchasing Division is not under the control of any particular subsidiary; it is an auxiliary service for the benefit of all seven companies.

For a number of reasons, far from trying to hide our name under a bushel, we have operated under various titles throughout New Zealand. We welcome this first opportunity of putting the name "Fletcher" into all our subsidiary companies because we dare to hope, without being immodest, that the name stands for something worthwhile.

Can we repeat that we believe the re-organisation will make our family tree easier to look at and better to comprehend.

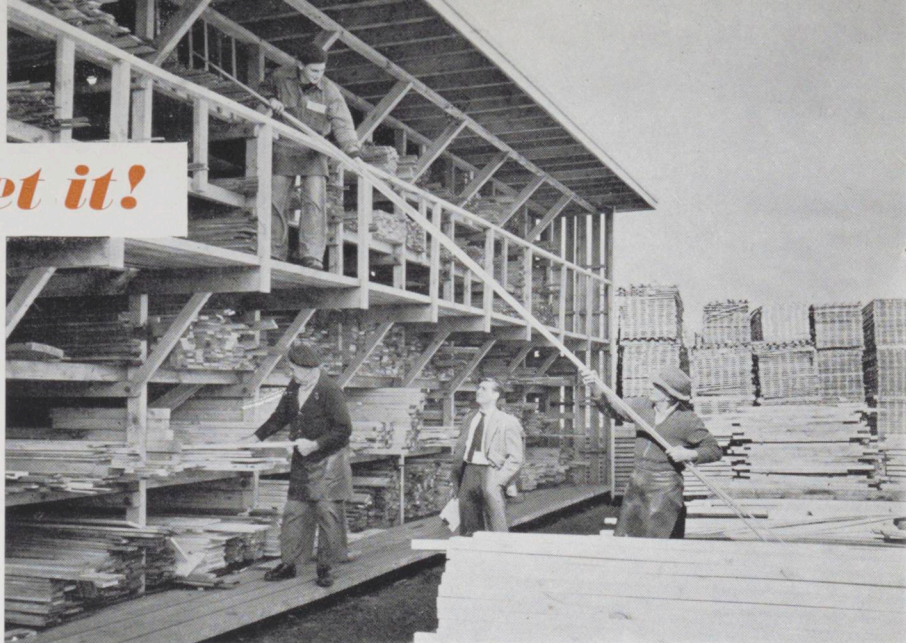
Handyman— come and get it!

There are few men who can't fix the front steps, mend a broken chair, or knock up a bookcase or a cupboard. If there's a woodworking job to attend to around the house, the average man doesn't call in an expert. He does it himself.

It was to provide a service for the thousands of Auckland home jobbers that the Handyman's Yard was opened at Penrose early in March. The idea was the joint inspiration of W. A. Bourke and F. Brown of Sales and Services.

Customers can drive in, park their cars, and purchase whatever quantity of timber they want, dressed and cut to size. Timber yards handling large orders cannot give time and attention to customers who want a few pieces of wood or ply cut to odd lengths. Handyman's Service caters specially for these cases. Many customers do not know exactly what they want until they discuss their ideas with the yardman who is there to help. He advises them what materials to use: he measures up, cuts to required lengths, and works out the right quantities of nails, screws, hinges, and hardware to make the job complete. Everything is parcelled up, paid for and taken away.

Saturday morning is the busiest time of the week. In the timber trade Saturday selling is accepted practice, but there is a restriction governing Saturday trade in builders' hardware. For this reason an application was made to the Magistrate's Court for permission to sell hardware items on Saturday mornings. Exemption was granted, and in his judgment R. M. Grant, S.M., said — "To deny the application would be to discourage that which should be fostered. The 40-hour week has doubtless created idle hours, and if the exemption tends to assist the public to utilize spare time in practical hobbies, the granting of the application would surely be in the public interest." He went on to compliment Fletchers for



The calm before the storm. The yard staff tidying up before the rush of customers. Left to right: Vic. Frederickson, Ian Wooller, Stan Klink, and on top Ray Walters.

their enterprise. The 'Auckland Star's' editorial comment of August 5, was that "good wholesome commonsense" had prevailed.

The popularity of the Handyman's Service has to be seen to be believed. On a Saturday morning as many as 170 cars were counted arriving and leaving between 10 o'clock and noon. Five ordermen are kept busy calculating, sawing, tallying. There is hardly time to light a cigarette.

An original venture needs a young man to run it and impart an atmosphere of enthusiasm. Ian Wooller has those qualities — he is only 21 and as keen as Colemans. He is backed by a good team of yardmen including Stan Klink and Vic Frederickson.

Stan has a fund of stories to tell about incidents that have happened.

One knowledgeable customer demanded twenty-five super feet of "oak" for a coal box, and picked out the lengths for himself. When he read the word "Tawa" on the docket he demanded an explanation, but was satisfied when he was told that this was the Maori name for Japanese Oak. There was also the chap who claimed a piece of Rewa Rewa was really mottled Rimu, and that he had not seen such a speci-

men for years. The story of the old lady who wanted one brick is also worth passing on. Someone facetiously asked her if she wanted to drown a cat. This she hotly denied, and stated that she was tired of hot water bottles bursting in bed.

Soon there will be improvements to speed up the service. It is proposed to fence off the yard and introduce a self-service system. Customers will then select their own timber from stacks marked in sizes, take it to the rip saw for cutting to length, go to the tally gate, pay the cashier and check out. Attendants are to have smart white uniforms with "Handyman's Service" embroidered on the pocket. A jockey cap and a smile to go with it should then complete one of the most novel and popular retail services yet seen in Auckland.

Other branches of Fletcher Timber are watching the success of Auckland's innovation, and plans for Handyman's Yards in at least two other centres are under way.



Slings & Arrows

Everyone will have something to say—good or bad—about ARROWHEAD. We want you to say it in writing. There may be other opinions you want to air. This column is dedicated to discussion. It is your forum.

We start it off with a few comments selected at random from unsolicited letters received to date.

"I am looking forward to the first addition of Arrowroot" — John Gielgud.

A second year boy writes from an undisclosed preparatory school, "I hope your magazine will have lots of cheesecake now that comics are going to be so dull."

The wife of an Otago boilermaker asks, "Please leave room for some nice recipes. My husband tells me that the foremen do their scones every day at the foundry."

CHRISTCHURCH PORTRAIT "MAC"



81 years old and giving a better day's work than many a young man, John McLauchlan, affectionately known as "Old Mac", is one of our outstanding personalities.

Originally a farmer, "Mac" came to us eleven years ago, and during that time he has turned a heap of waste land and rubble into a delightful scene of cool lawns, gay flowers and shady trees and shrubs.

Out of seven entries in the annual competition for the Factory Gardens Award of Merit, "Old Mac" has won for us five first prizes and one second prize. On wet days you will find him setting the pace on crate making in the factory, his quiet good humour an example to us all.

An interesting study of mixed emotions may be seen on "Old Mac's" face on the day of our annual Christmas Party; as five hundred exuberant children trample gaily over his precious garden, the benevolent smile struggles with a look of anxious concern as plant after plant pays tribute to the carefree happiness of youth.

However, that smile remains uppermost, so good luck to you "Mac" and many happy plantings.

PRESTRESSED CONCRETE DIVISION FORMED

The well known system of 'Preload' prestressed concrete which was introduced into New Zealand 18 months ago by the Preload Central Corporation, a wholly owned subsidiary company of the Preload Company New York, has been taken over by Fletcher Construction.

A new Division, to be known as the Preload Division of the Fletcher Construction Company Limited, has been established. It has taken over the complete organisation of Preload's New Zealand Company, whose present Manager — Max Dijkmans — will become the Manager of our Preload Division. Mr. Dijkmans is of Dutch nationality, was a prisoner-of-war in the East Indies and, after being wounded in action, finished his engineering studies in Holland. He came to New Zealand in 1951.

Preload's offices are at present in Nelson Street, Auckland, just opposite our steel and engineering and joinery factories. The Company has important current contracts for the Ministry of Works for reservoirs, and is building a large reservoir for the Tasman Company at Kawerau.

The changeover is to date from September 1st. Our Preload Division will obtain design and technical services from Preload New York, but this latter Company will have no financial interest whatever in Fletchers.

We asked an expert to explain in simple terms what prestressed concrete meant and he said:—"Imagine some cotton reels threaded together with string. If the string is held loosely they make a necklace, if you straighten the string the cotton reels straighten up. If you tighten the string on the two end reels you get a strong straight beam. Prestressing is a refinement of this principle and permits the building of long spans and big slabs with adequate strength, economising in use of reinforcing and structural steel."

STAFF VISIT KAWERAU

On Sunday, 26th September, a party of the Penrose staff went to Kawerau for the day. Miss June Irvine, who came from Scotland a year ago to join us, gives us her own description.

The bus left Auckland at 6 a.m. in dull weather but as we climbed over the Pokeno Hills we saw the Waikato River far below us bathed in warm spring sunshine. We drove through Hamilton and Cambridge and stopped at Rotorua for morning tea. This was my first glimpse of the beautiful lakes and the magnificent bush scenery which lines the road for mile after mile.

On arrival at Kawerau soon after 12 we were met by Mr. Jack Smith who first showed us round the new township which is to house the mill employees and their families. It is a lovely setting for a town with Mt. Edgecombe towering on one side and the rolling wooded hills on the other. And it was so warm! I don't think I've ever felt so hot before.

We had a very nice lunch at the Hostel and then inspected the new mill. It is remarkable how quickly these enormous buildings have been put up. Mr. Smith explained that only a year ago the site was just being cleared for the foundations. Already they are starting to install some of the machinery which is to produce newsprint in 24 feet wide rolls. The administrative offices are a dream. I envy the girls who are going to work there.

The return journey started at 3 p.m. We stopped at Hongi's track and paid homage at the historic wishing tree. Then after skirting Lake Rotiti sparkling in the afternoon sunshine we came to the heart of the thermal region — Whakarewarewa. The famous guide, Rangī, showed us round the boiling pools and the Maori village and our luck was in — the Pohutu Geyser was playing in top form.

We reached Rotorua by sundown and had tea there. Then we settled down for the drive back to Auckland after a truly wonderful day's outing.

Personalia

This column is strictly personal. It is reserved for staff news; arrivals, promotions, transfers, retirements and the events that punctuate the private lives of Fletcher employees. We are starting off with a small column but we hope it will grow within the reasonable limits that space will allow as ARROWHEAD becomes better organised. It isn't very well balanced as we don't have "staff correspondents" in all centres yet, but that will come in time.

AUCKLAND

HATCHED: To Fletcher Holdings, a bi-monthly magazine, two colour glossy (We knew you had it in you.)

Mr. Fred Brown, General Manager of SALES & SERVICES announces an attractive new line—a baby daughter—born on 6th July or August (He is not sure of the month).

MATCHED: Miss Diane Harman of head office, Auckland, to Mr. George Caulfield, 2nd Officer on R.M.S. "Rangitiki."

ATTACHED: Miss Elizabeth Abernethy of head office announces her engagement to Mr. William Thomson of Auckland.

Miss Esme Brydone has become engaged to Mr. Donald Kelly of Auckland.

WELLINGTON

A daughter was born to Mr. and Mrs. K. Darroch of SALES & SERVICE on August 4th.

CHRISTCHURCH

CONGRATULATIONS

Our good wishes are extended to Mr. J. P. O'Hagan of the Plywood Factory on the recent birth of a daughter.

To Mr. B. A. Couling, an electrician in the Durock Factory, on becoming the father of a brand new son.

To Mr. D. Erskine of the Plywood Factory, who is now the proud father of a baby boy.

To Mr. Colin McKay of the Transport section of The Fletcher Construction Co. Limited, on his recent marriage.

To Mr. Peter Holliday of the Durock factory on his marriage to Miss Field of the Plywood Factory.

To Mr. Colin Atkinson on the confirmation of his appointment as Secretary of the Social Club.

RESIGNATION

It is with regret that we are saying goodbye to Mr. Wyn Fairclough, who is leaving us to take over an interest in the motor industry. Wyn's cheery laugh and rapid fire jokes will be missed by many of us — so good luck Wyn in your new venture.

WELCOME

Mr. J. B. Cann has recently joined the staff of the Durock factory, bringing with him 20 years' experience in asbestos cement production in England, India and Africa.

Although he has been with us for only a few short weeks, John is already very popular.

THE cover photograph is an aerial view of the Tasman Pulp and Paper Company's plant, taken at the end of September.

The adjacent construction camp, the new motor highway, and the new township of Kawerau in the left background are all strategically located in relation to the Tasman Mill, illustrating the orderly layout of the entire project.

The Tasman Pulp and Paper Company which will operate the mills when Fletcher-Merritt-Raymond has completed the construction contract, was originally sponsored by Fletchers when the New Zealand Government called for proposals from all over the world to purchase logs from the Kaingaroa State Forest. Tenderers had not only to offer to purchase the logs but were also required to enter into an undertaking to erect and operate an integrated plant to manufacture pulp, paper and sawn timber.

The cost of the project will be in the vicinity of £16 million. The Company has a share capital of £6 million of which £1 million is being subscribed by Fletchers. Sir James Fletcher is Chairman of Directors of the Tasman Company.

The plant will make New Zealand self-sufficient for newsprint and it is expected to make a considerable contribution to the economy of our country by both saving and earning valuable dollars.

