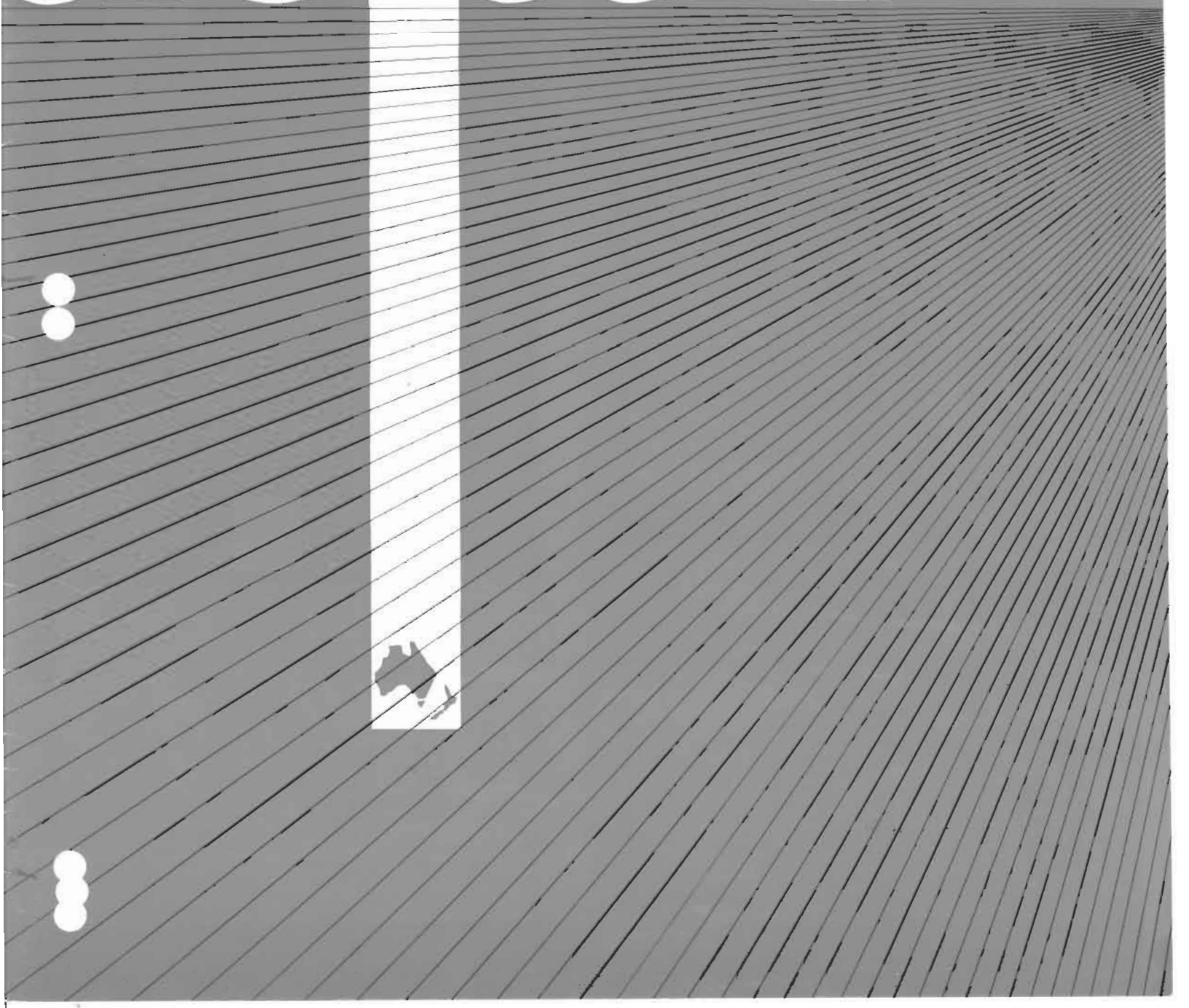
depth

No. 8, MAY 1973

For the Australian New Zealand staff of Hewlett-Packard



HP BENEFITS SCHEME

In line with HP's policy of providing the maximum security and protection to the employee and his family in the event of illness, a number of changes have recently been made to the Major Medical and Dental Expenses Coverage plan provided for them. As many employees are not fully aware of the various benefits available to them until accident or illness actually occur, now is the ideal time to outline both the HP Benefits Scheme and the recent changes made to it.

Since the beginning of HP Australia, the Company has maintained a comprehensive group insurance plan to provide protection for HP employees and their families against the financial burdens imposed by accidents, sickness and deaths. In addition to this the Company also provides a retirement and family pension plan.

Basically the HP Benefits Scheme provides H.B.A. coverage, Life Insurance, Accidental Death and Disemberment, Hospitalization, Surgical, Medical, Dental, and Long Term Disability Insurance at no cost to employees. These benefits, except the Long Term Disability and Life Insurances, may be extended to an employee's dependants at a nominal annual charge. A Travel Accident Insurance Policy also covers all employees whilst they are travelling on Company business.

The retirement and pension plan is a separate scheme which is both compulsory and contributory after one year's full-time employment with HP.

Generally, Insurance benefits are automatically available to all employees. However, in some cases certain policy exclusions, eligibility periods and health requirements apply. If you are in doubt about benefits available or wish to have the details of policy exclusions clarified the HP Personnel section is always happy to assist.

Recently three important changes were made to the Major Medical and Dental Expenses insurance policy. The first was an increase in the individual annual expense limit from $3000.00 to $4000.00 and the second was a re-definition of the term "dependants". Under the new definition the husband of a family as well as the wife or children of a family may be classified as a dependant. As before, children under 16 years of age, or unmarried full-time student children under the age of 24 years may still be classified as dependants. These changes are retroactive to November 1st, 1972.

The third change recently effected was a reduction of the fee for extending the Major Medical Insurance to dependants. The annual sum is reduced from $30.00 per family per annum, to $25.00 per family per annum. This sum is normally paid by half-monthly payroll deductions of $1.04.

THE PYMBLE REPORT

Although we have no absolutely world-shattering news to report of the activities in Sydney office, the Pymble people have been quite busy, each in their own way.

For example: wedding bells are in the air again in Sydney office. Jan Acheson, Bill Thomas' secretary in Sydney, recently bounced into the office dazzling us all with her new engagement ring. Her finance, David Drabble, obviously believes in the advertisement "When you're on to a good thing . . . " as he made sure of Jan by marrying her on March 31. Every happiness, Jan!

On April 6th, we were saddened by the loss of one of our Calculator F.E.s. Urs-Peter Hertner left us to join his wife in their own business ventures. His is a coin-operated laundry. The Hertners believe that a Swiss laundry will be a profitable new twist on the old idea of a Chinese laundry. We hope they really "clean up!"

Mike and Heather Stevens are proud parents once more with their third child, a baby girl, Marion, born on Sunday 11th March. With two girls and one boy we are wondering if they are now working on completing the set with a further boy.

Since the last issue of "Depth", we have four new staff members in Sydney — David Strong, our Data Products Field Engineer, joined us from Univac and brought a wealth of computer marketing experience with him.

Judi Perry is now filling the dual position of Secretary and Staff Engineer for Analytical/Medical Products were in Sydney. Judi came to us from the University of N.S.W. were she was doing research work in Textile Physics. Judi and her husband Phil are presently having their home built at Terry Hills.

Another new face around the Sydney scene is that of Matthew Wallace who has joined us as a Service Technician for Calculator products. Matt is married and they are expecting their first child very soon. As well as having electronic calculator service experience, Matt has spent two years lay-preaching with a Christian Evangelical organisation called "Life Gate".

NEWS FROM UP NORTH

Things have been moving in HP Brisbane — the whole office in act. We have not gone to Toowong, as was published in the last opy of "Depth" but have gone instead to Gregory Terrace, which is on the modern outskirts of our fine city.

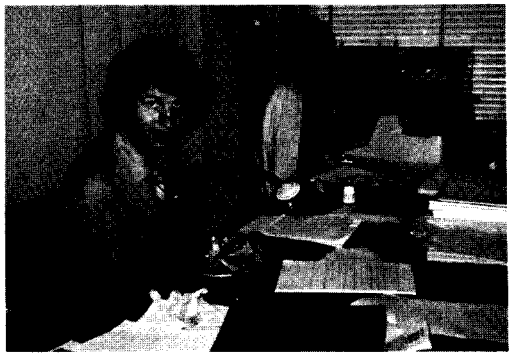
Since the last issue of "Depth", other than welcoming Bruce Ibbotson to our midst, we also have had the pleasure of welcoming Pauline Cooney as our first Secretary. Pauline has had a hard time of it, sorting out all our problems — like filing.

Bruce has also had his problems, and he now realises that 1,200 miles to Melbourne is a long way by telex, phone, memo or any other method.

As yet we do not have enough staff to form a basketball team to take on the Melbourne Maulers, however the sight of Bruce Ibbotson hanging pot plants from our 12 foot high ceiling leads us to the conclusion that we have an enormous potential.

THE VERSATILITY OF H-P's PEOPLE . . . AND EQUIPMENT

"Yon Cassius has a lean and hungry look . . ." Here Tom Baird of Canberra office displays his versatility by thoroughly enjoying one of his snack periods while simultaneously engaged in marketing research. He claims that in cases such as this it's not at all hard to do two jobs at once!



Computer Museum

Tom Baird at work (the girl is a temporary typist).

H-P equipment is also very versatile — in many cases our instruments can perform tasks which none of our staff had ever dreamt they would be called on to undertake. For example, while Adrian Farrell was visiting Canberra to demonstrate the Fourier Analyser System, he had the opportunity of trying it out on some data provided by Dr. Harald Nocke of the Australian National University (shown in the foreground). Dr. Nocke is doing a study on a species of cicada, (our learned readers will know this as a cystosoma), and he is currently analysing their mating calls. He found the Fourier Analyser System a tremendous help in doing this — which only goes to prove that H-P equipment can be used to find out how things tick!

The fourier analyzer at work in Canberra.

THE SOUTH AUSTRALIAN SCENE

The scene in Adelaide has been a busy and changing one lately. We have just appointed a new Field Engineer named Mike Duffy to our staff. Mike is a "Calculating" salesman, he has been married seven years and has two children.

Vibrating Barbara Sheldrick is back again after six weeks away on an interstate trip. Who wouldn't be vibrating after 274 continuous miles of unsealed road on the Nullarbor Plain!

Ken Jackson has also been away. Ken sampled the four S's . . . the Sea, the Surf, the Southern Vineyards . . . and **now**, Sobriety. He had most difficulty with the latter.

Recently Bill Caelli was in Adelaide as a visitor. In 5½ years in Adelaide, Gray Morgan has picked up only one parking ticket. Gray swears his recent bad luck must be Bill's influence, because in two days of driving Bill about, he has been given **two** parking tickets. So be warned one and all, if our good Doctor Caelli is travelling with you, be careful where you park.

TECHNICAL HITCHES

Despite the expenditure of thousands of dollars and countless man-hours in both design and quality control no Company can ever be completely sure that its products will be able to perform to full published specificiations ALL the time or under EVERY circumstance. HP goes to far greater lengths than most Companies to ensure that its products have the capability to operate correctly despite adverse conditions — they have even made an oscilloscope that operates underwater. But even HP cannot anticipate every circumstance.

This was illustrated in the Service section in Melbourne recently. An engineer in Lae in New Guinea was constantly using an HP instrument when suddenly it refused to operate correctly when he switched it on one morning. Perplexed, he examined it but could find nothing wrong. As it was needed urgently, he went to considerable expense to have it shipped by air back to HP Melbourne.

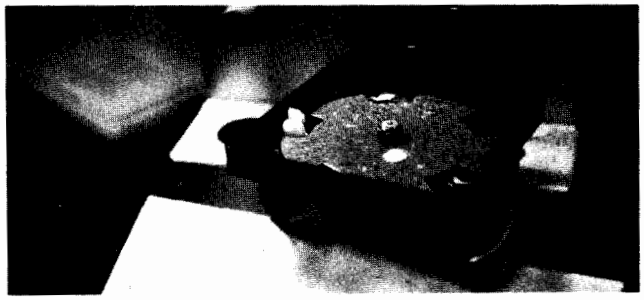
Several tests were run on the instrument, and although it was obvious that it was faulty, no reason for the failure could be readily located. The whole instrument was virtually dismantled before the reason for its odd behaviour became apparent . . . in the humid conditions of Lae there are influences that not even the most far-sighted design engineer could be expected to foresee; spiders! A spider had crawled into the instrument when it was switched off during the night and had laid its eggs, thus jamming the operation of an essential rotary component — the fault was not with the instrument at all! As soon as the obstacle was removed it operated perfectly.

Needless to say, the equipment was re-assembled, checked and shipped back to the customer, who was delighted to have it back in such a short time.

A similar recent case was a model 562A belonging to the Army which had passed the performance tests of the Army Inspectors, was delivered and when finally came to be switched on, promptly burnt out a fan. The unit had been sent to the Army Base at Bonegilla and was put into storage for some years before it was required. During this period a plague of mice was rampant in the area.

When the instrument was returned to HP it was found that mice had chewed up the air filter. Pieces of chewed filter and mice dirt had immovably jammed the fan blades, thus causing the fan motor to burn out when it was switched on.

One of our 3800B Distance Meters was recently returned to Melbourne, after a several month sojurn in West Irian, showing some corrosion of various components. This instrument had been used in measuring the rate of flow of a glacier which had its origins in the highlands and extended through the jungle to the sea. The 3800B had been expected to perform whilst subjected to the icy conditions of the glacier, the humid conditions of a tropical jungle and the corrosive influences of salty sea air — with all these extremes being experienced in a matter of hours of each other! Despite this the instrument had performed creditably for several months.



The offending spider eggs in situ.

STOCK TAKE DAY

An annual event of interest in Melbourne HQ is the stock take. The latest one proved to be no exception.

As usual, the entire Weir Street premises became a scene of apparent chaos with disorganized looking groups of people and equipment scattered about cluttering corridors and being supervised by happily grinning auditors muttering numbers. The confusion was only in appearance however, as good organization by all concerned ensured that the actual counting took only a relatively short time.

Perhaps a highlight of the whole event was the Demo equipment stock take. This involved the collection of Demo equipment from all over the Australian area and was undoubtedly the most involved logistics exercise in the entire history of HP Australia. Instruments of every conceivable type were stacked down in "Jim's Jungle" and in such quantities that the entire Marcom area took on the appearance of a gigantic IC.

Jim "cornered" both Tony Cookes and Bill Thomas to re-allocate equipment to the various offices, and the equipment was duly recorded, labelled, boxed and shipped on the return journey.

In our photograph **some** of the equipment is shown as Bill Thomas tries to determine whether a tripod came from Queensland or South Australia by the traces of mud slinging to its feet.

WHAT A WAY TO END A WEEK!

Noel Marshall of Microwave Division visited our Sydney office recently and in one way his visit did not end quite as well as could be hoped.

After a very full and busy week in Sydney Noel was feeling rather exhausted by the time Friday evening came around. That night he had been invited around to Gordon Smith's home. Noel told Gordon that he would return to his motel to rest, contact a few friends by 'phone and then give Gordon a call to come and pick him up.

When Noel got back to his motel he lay on his bed, put his hands behind his head and promptly dropped off to sleep. An hour or so later one of his friends rang him in his motel room. The sudden ringing of the 'phone gave him such a start that he reared up and dislocated his shoulder in the process. Gordon never did hear from him that night but the next morning Noel rang Gordon to explain. It seems that he had spent two or three hours in the Royal North Shore Hospital being treated.

Gordon, who had been kept waiting in vain, wasn't very sympathetic and had a chuckle over the explanation. This hurt Noel a trifle and he hastened to explain that a dislocation is really rather painful.

We wonder what Noel's wife will think of the way we treat our visitors when he meets her at the airport with his arm in a sling.

WE BUILD 'EM TO LAST!

"Depth" recently instituted a search for the oldest Hewlett-Packard built item of electronic equipment in Australia. The search continues as we cannot yet be certain that the very oldest instrument has yet been located.

We did turn up some interesting results however. Don Simmons reports that a friend of his at the P.M.G. Research Laboratories has found that the P.M.G. still has an early model 200C Oscillator. This is now in their museum but they also have three 410A Voltmeters. Of these three, which are each nearly twenty years old, one is now used on a temporary loan basis and the other two are still in service! The three instruments were purchased by the P.M.G. on February 16, 1949. Considering that Bill Hewlett and Dave Packard started out in a backyard garage in 1939 it didn't take long for the Company to become international!

SOME DAYS ARE LIKE THAT!

During February, Barry Liston and Roger Bailey drove to Traralgon to give a demonstration of a D.M.I. to one of the local surveyors. The demonstration involved shooting a series of lines on the Latrobe Valley airfield as part of a contract the surveyor has with the Department of the Interior.

Barry carefully set up the 3800B and explained its operation. He then unpacked the single prism assembly necessary to shoot the first line. The prism has a red and white sighting stick mounted vertically above the glass. The surveyor's son, who was to act as the chain-man, asked what the purpose of the stick was. Barry quipped, "This handle is for you to hold if you have to kill a snake with the prism."

The chain-man moved off to set up the prism and was suddenly confronted by a large black snake. "Snake! Snake!" he yelled and grabbed for the sighting stick. Immediately, Barry went racing across the airfield frantically calling out, "I was only joking, don't hit it with the prism!"

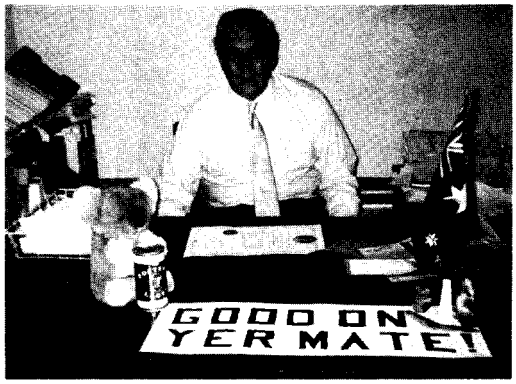
Bill Thomas sorting demo equipment.

ANOTHER NEW AUSTRALIAN . . .

Hewlett-Packard Australia has recently been blessed with another brand-new citizen; and that does not necessarily mean somebody has had another baby! After many years of dodging both the U.S. and Australian draft, Dick expected to be called up in the very near future. However, having lived in Australia, a certain number of national characteristics have rubbed off and he has used his many years of varied experience to come up with a very simple solution. Dick decided if you can't beat 'em you may as well join 'em!

Our photograph was taken at a brief but beautifully heart-warming ceremony in the Canberra office, at which Dick was presented with the key of a can of Fosters, to commemmorate the day he officially became an Australian citizen. Dick had only one comment to make on the grand occasion . . . a VERY Australian-type comment judging from his expression . . . we leave it to the reader to judge just what it was.

Warm congratulations Dick, from everyone at HP, particularly those in Canberra.



Dick on the big day.

WHAT IS A CUSTOMER?

A Customer is the most important person in any business.
A Customer is not dependent on us: we are dependent on him.
A Customer is not an interruption of work: he is the purpose of it.
A Customer does us a favour when he calls: we are not doing him a favour when we serve him.
A Customer is a part of our business, he is not an outsider and not a cold statistic: he is a flesh and blood human being with feelings and emotions like our own.
A Customer is not someone to argue or match wits with.
A Customer is a person who brings us his wants: it is our job to fill those wants.
A Customer is deserving of the most courteous and attentive attention we can give him.
A Customer is the life-blood of this and every business.

THE FOURIER FEMMES FATALE.

In conjunction with the release of HP's new Fourier Analyzer, printed Tee-shirts were produced as part of a promotional campaign run by Santa Clara Division. Several of these were sent to our E.P.G. people at the Prospect Hill office, and they decided a fashion parade would be in order. The photograph shown was taken of the event and a copy of it sent back to Santa Clara where it was subsequently published in their own magazine, the "Santa Clarion". Shown are, from left to right, John Bieske, Sue McLean, Mary Lyster, Iris Smith, Karen Edye, Irene Bay and Don Simmons (seated).

arious E.P.G. models.

COMPANY GROWTH

We have all been aware that the Company has been growing dramatically, over the last twelve months in particular. Tabulated below are some statistics indicative of our growth rate.

As the whole point of HP Australia's existence is generating orders and distributing shipments, and as these functions can be readily expressed statistically, a comparison of work loads in March 1973 and March 1972 was undertaken. Although no particular month is truly typical, the comparison is valid as there were 21 working days in both months and no outstandingly significant orders or shipments processed in either month.

The table below presents a statistical comparison of the work load increase over the last twelve months:

ORDERS	**MARCH 1972**	**MARCH 1973**
No. of Australian orders	255	683
No. of Australian order line items	452	1139
No. of New Zealand orders	14	80
No. of New Zealand order line items	34	117
INVOICES		
No. of Instrument invoices	279	540
No. of Instrument line items	448	808
No. of Parts invoices	240	436
No. of Parts line items	313	672
No. of Service invoices	114	194
No. of Service line items	125	208
TOTAL INVOICES	633	1170
TOTAL LINE ITEMS	886	1688

DATA CENTRE TO BE UPGRADED

Until now HP Australia has been using an outside Computer Bureau for recording statistics and providing the necessary information to generate management reports and to maintain the Company's ledger accounts. It has now been decided that all future Data Processing will be carried out with in-house equipment as from November 1st 1973. This will involve the up-grading of the Melbourne Data Centre and the hiring of a full-time Systems Analyst to supervise existing in-house systems with a view to ultimately putting the various Administrative groups concerned with data collection "on-line".

STAGGERING STATISTICS!

Did you know that for the whole of HP's Australasian operation:
* Communications, via telex and telephone only, cost 1% of annual turnover? That is, if the Company targets for an annual turnover of, for example, $8,000,000 then communications will cost $80,000.
* International freight costs 5% of our annual turnover and our total billing is expected to be approximately $400,000 this year?
* General overhead expenses (that is Field Engineer and Sales Support, Order Processing and Administrative costs) cost us about 15 cents of each order dollar we receive?

Obviously, although we deal with several million dollars worth of goods annually, only a very small percentage of this amount is profit. Therefore it is the responsibility of each of us to minimise costs and strive for maximum efficiency.

BIRTHS: To Judy and Bruce Marsh, a son, Andrew Bruce, born March 21st.
To Irene and Danny Kovacs, a daughter, Georgina, born March 20th.
To Leone and Barry Liston, a daughter, Joanne Catherine, born February 26th.
To Jan and Neville Petersen, a daughter, Renee Louise, born February 21st.
To Heather and Mike Stevens, a daughter, Marion, born March 11th.
To Maureen and Adrian Farrell, a son, Justin, born March 31st.

MARRAIGES: A happy event for Jan Acheson — she became Mrs. David Drabble on March 31st. Best wishes from all at HP Jan and David!

NEW HOMES: The long wait is over for Janet and Terry Gunning; they moved into their new home at Narrewarren on February 24th.

JUST FOR FUN

THE TROUBLES OF NOT BEING TECHNICAL!

Among the people who have my admiration are those who know the correct terminology for devices which are not necessarily "up their alley."

Recently, I decided to learn to type, and to practise, I borrowed a small portable. Inevitably, it went wrong. Feeling guilty, I 'phoned a repairman – a local Italian bloke who is most obliging about repairing typewriters and delivering them promptly.

He'd be glad to do the job he said, but it might hurry things up if I would tell him what was wrong. "Well," I explained, "when it turns, it doesn't!" Prolonged silence. "Nino? Are you still there?" I asked anxiously. "Yes-a, I'm-a here." He sounded as if he wasn't quite sure. "What I mean is, the jigger doesn't turn when I turn it; the round whatsit. You know?" "The ribbon wheel?" "No, not a wheel", I said. Another silence. I felt I should be more specific. "There's a thing like a clothes wringer. Or rather, half a wringer . . . it's supposed to turn. Only I don't actually turn IT. Do you understand?" "Not exactly" Resignedly. A patient soul is Nino. I tried again. "You know the thingummy on the side you go like THIS to?" I did a brilliant bit of pantomime, and a polite but sarcastic "Uh-huh,," came from the 'phone. "Then there's this click, or even a clickety-blick and it sort of jumps. You follow me?"

Suddenly he must have caught a telepathic message. "You mean the armature for the line spacer doesn't turn the platen?" "Terrific!" I yelled. "That's the ticket!" "That's-a easy," he said and launched into a technical diagnosis which I cut short. "But that's not all!" Groans. "You know those little gizmos at the back?" "Gizmos?" Nino sounded stunned. Maybe "gizmo" means something impolite in Italian. I hastened to explain. "Those little bits you move along the thing with notches so when you push a key that doen't write it all goes PING or ZAP to wherever you want it to go and you don't have to look or anything." Have you ever HEARD somebody beam? Nino did it! "You mean the tabulator?" "Probably. There's a fat key with TAB on it and it's got nothing to do with race-horses." "It's-a not a-working OK?" I said, "It works TOO well!" More groans and something sounding like a fist beating a brow came over the line. "I mean, it overshoots itself. Sometimes. Maybe I hit the key too hard. Or twice. I've got wobbly hands." I gave a nervous laugh.

By this stage Nino was obviously thinking that not only my hands were wobbly. He said soothingly he'd be right over to pick it up, and did I think that maybe I'd been working too hard lately? Nice bloke, Nino.

The same sort of thing happens at work. I was belting away at the old typewriter when suddenly the writing went faint. This was quite beyond my ken so I sought help.

I went and found the lass that looks after all the paper and writing things. "Di," I said, "My typewriter's grey." She looked at me sort of funny-like. "That's nice," she said, "Bluish-gray, greenish-grey or two-tone?" "Sort of whitish-grey," I said. She turned away. "We'll have to do something about it," I said. She came over and whispered conspiratorily to me. "We're out of red paint!" "No," I said, "You've got the wrong idea. My typewriter's cream and green." She started looking for somewhere to run. "It's the writing," I hastened to explain. At this she let out the breath she had gathered for a scream and looked rather relieved. "Ah," she exclaimed, "You've run out of ribbon! We'll soon fix that!" Nice girl, Di, but kind of nervy sometimes.

So we went to the stationery cupboard. (Why she calls it stationery I don't know – I've never seen a moving one yet! At least, not sober, I haven't). Any way she took out a packet like a pill-box and off we went to the typewriter. "The first thing," she said, "is to take off the cover". Strewth! I knew she was having me on! I'd had to take the cover off to start typing – even I knew that! Grinning confidently, I showed her the plastic dust-cover neatly folded in my desk drawer. "Not THAT cover," she laughed. With a quick flip she whisked away the front half of the machine and exposed the whole mechanical mess. Diving straight in with her pill-box she began reeling out about half a mile of black bra strap! "Poor kid's got a problem", I thought to myself. As I blushingly stepped forward to offer assistance, she straightened up. Slamming down a lid, she rubbed her hands together briskly and stepped back. "There you are", she said and went away.

Well!!! How could a bloke be expected to fiddle with THAT sort of ribbon anyway?

Then there's the Service Department. Now that's REALLY mind-bending! The first time I went down there I was left speechless and goggle-eyed. Everywhere I looked there were naked television sets that weren't television sets, radios that made no sound, radar screens without their warships, green lights and glowing numbers doing franzied dances and blokes probing at things with electric pencils!

One of the blokes realised I was a new-comer and came up to speak to me. Hell's bells! He had this fanatical gleam in his eye (Maybe it was a reflection), and he started to tell me how he was using a logic something or other to work on an atomic clock! A really kooky one! "Stay away from me, Sport," I said, "I'll dong you one!" He gave me an odd sort of a look, but fortunately backed away, muttering something about the strange effects of high frequencies. Nutty as a fruit-cake that one! Brave chaps those Service fellas . . . wouldn't fancy having to work with a bloke like that in your midst. I would never work down there anyway, it would take too long to learn the special, coded, numerical language they speak. (Still, I am slowly learning. I now know that an oscillator isn't necessarily something that wobbles, and there are other kinds of pulses you don't measure by holding your wrist).

If you're one of my kind and in no way technically inclined, it can be disheartening to work in a technical Company. Still, wiser men than I have said that there'll always be work for a humble pen-pusher, so I guess I'll just stick around a while. You never know, maybe I'll eventually absorb enough "know-how" to be able to do something useful – like changing a fuse instead of buying candles!

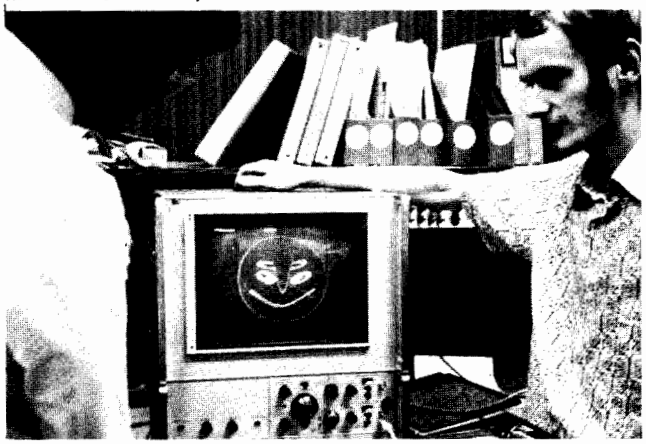
REMARKABLE NEW INVENTION!

We all knew that Ralph Pfisterer our brilliant "boffin" of the Systems Integration Centre was scheduled to go to the U.S.A. and his native Germany for a special training course. And we all THOUGHT we knew WHY. It now appears that most of us may have been wrong.

Ralph, with fiendish cunning, had put about the rumour that his training was relevant to his taking charge of HP's new Systems Integration Centre. But now his strictly guarded secret is out and the REAL reason for all his special training has come to light! Ralph is an undercover member of Research and Development and has invented an entirely new instrument – the prototype of which was built at GMBH and later presented to him.

This new instrument, which he calls a "Thoughtness Analyzer", is so revolutionary in concept that so far nobody has thought of a use for it! Broadly speaking, (for the sake of pre-patent secrecy) the machine consists of a cathode ray tube connected to a power supply and innumerable I.C's, resistors, transistors diodes, gizmos, thingummyjigs, howdyacallits, jiggermaroosters and whatsits. The amazing end result of cunningly combining these components is a glowing green face displayed on a screen! This greenly glowing ghoulish apparition is no mere static display however. It has the uncanny ability to constantly cycle its expression from a devilish grin through to an expression of deepest, darkest gloom and back again.

Production run schedules are currently being discussed and a full scale program of sophisticated market research has been undertaken. In the meantime Ralph is puzzling over a worthwhile use to which his invention can be put.



Ralph demonstrating his invention to Peter Burfurd.

DEFINITIONS

This handy list of translated definitions was recently received from L.F. of the Black Forest, our special central European correspondent. He claims they are of inestimable worth during particularly aggravating moments and recommends their use by anyone who can pronounce them.

BUDGETS: Der hedscratchen bukwerken.
COMPUTER: Der maschinen smartalecken.
SALES MANUAL: Der buks mit aller bunkum innit.
PROFIT SHARING: Lissenwaiten hopenmaken fortun.
DISTRICT MANAGER: Der klotzen interstaten trienen maken budgetfitz.
EDITOR: Der dumpkopf trienen sumpen ouder nudden maken.
FIELD ENGINEER: Der smartalecken whoz stayzouten alladayzen
TELETYPE: Der clattermaken smarttalken maschinen.
SERVICE TECHNICIAN: Der nutzen mid alladen boltzen.
ACCOUNTANT: Der dumpkopf schwienhund mit aller loothid.

THE DEVIL DRINK!

"Depth" proudly presents for your enjoyment (sadistic or otherwise), an original poem, written whilst recovering from being under the affluence of incohol, by Mr. Frederick Albert Percival Nurk, of 3946 Warrigal Road, Nar Nar Goon North, (Telephone 1234567890), who wishes to remain anonymous.

Last night I "hit the slops" again,
And now my head is aching,
My eyeballs burn, my throat is parched,
Both hands and knees are shaking.

I wish I had a will of steel,
And head of the same stuff,
'Cos then I might resist the grog;
Not wake up feeling rough!

SPEAKING TECHNICALLY . . .

Many millions of words have been written on instrument servicing, troubleshooting, correct methods of doing this, proper procedures of doing that and approved methods of working; but few, if any, have been written on how to understand the ceaseless flow of technically oriented trash that flows from the lips of Sales or Service engineers. This jargon is so unlike the Queen's English that listeners could well be forgiven if they came to the conclusion that it was some obscure dialect of a foreign language.

This article is specifically designed to lay bare all the pertinent facts and enable our readers to actually understand, or even join in these involved technical diatribes. To this end a short dictionary of technical terms is given below. Readers are advised to carefully read and thoroughly digest these terms to enable them to understand their uses. (This issue of "Depth" has been specially printed on rum-flavoured, wine dipped paper to facilitate this task).

AMP: is not the abridged name of a large Insurance Company – it is a shortened form of the word "ampere".
AMPERE: French for two amps.
ANTENNA: a male ant with a high voice.
ATTOFARAD: everybody knows that!!
BRIDGE: a large balancing device which seems to have the knack of falling down whenever constructed in Melbourne.
CHARGER: what Ray Hartley does when some unsuspecting female asks him to repair her car radio.
FREQUENCY: the period of time between coffee breaks.
OHM: many laymen think that this is where one lives and 'angs 'is 'at; in fact it is the beginning of the sentence "OHMy Gawd! This xxxxxx instrument just wont work!"
PULSE GENERATOR: the heart.
SEMICONDUCTOR: a part-time trammie.
SILICON: a sales pitch that has no hope.
SWEEP GENERATOR: a technical term meaning "broom".
VOLTAGE: how old a volt is.
WALT: Ralph's name for what everybody else calls a volt.

Now, all that is necessary to become proficient at "speaking technically" (or even become a Sales or Service engineer) is to practise using these words in your everyday conversation. This will have the effect of:–
a) amazing your friends, b) confusing your friends, and finally c) losing your friends.

GOOD ADVICE!

A lion went hunting and discovered a bull in a thicket. The lion sprang upon the bull and devoured him. After gorging himself the lion felt so good that he roared and roared. The constant sound attracted a hunter who shot and killed the lion. The moral of this tale is obvious . . . when you are full of bull, it pays to keep your mouth shut!

BASIC CHEMISTRY

What are little girls made of? "Sugar and spice and all things nice," according to the well-known nursery rhyme. Well, there are nice things all right, including at least four ounces of sugar. In addition there is approximately:
85 pounds of oxygen
2 ounces of salt
100 pints of water
3 pounds of calcium
24 pounds of carbon
enough chlorine to disinfect 5 swimming pools
enough phosphorus to make 20,000 match heads
enough fat for 10 bars of soap
nough iron to make a two-inch nail
enough sulphur to rid a dog of fleas
nd enough glycerine to explode a Navy shell . . . BUT . . . no spice!

WORKER'S COMPO UPS AND DOWNS

The following tale of woe was written in response to the question on a worker's Compensation Form – "How did the accident occur?"

"I was repairing a chimney and had rigged up a beam with a pulley at the top of the building to hoist up bricks and mortar. When the job was finished there were a lot of bricks left over, still in the barrel which had been hoisted up with the rope nicely secured on the ground floor.

In order to get those bricks down again for further use on a different job, I went down and undid the rope. Unfortunately, the barrel of bricks was heavier than I was, and before I knew what was happening, the barrel started down, jerking me off my feet. I decided to hang on and half-way up I met the barrel coming down, and received a severe blow on the shoulder.

I then continued to the top, where my head collided with the beam, and at the same time my fingers got jammed in the pulley. In the meantime, the barrel hit the ground and burst its bottom, allowing the bricks to fall out. Now, suddenly, I was heavier than the barrel, and at high speed, started down again.

Half-way down I met the barrel coming up and received severe injuries to my shins. When I hit the ground, I landed on the bricks, receiving many painful cuts from the sharp edges of the same, but still clinging onto the rope. At this point I must somehow have become confused, although I don't know why, and let go of the rope. As I did so, the barrel, suddenly heavier than the rope, came down again at even greater speed and landed on my head – the next thing I knew was that I found myself in hospital.

Do you think that this constitutes an accident under the Act?"
And that's how it happened!!!

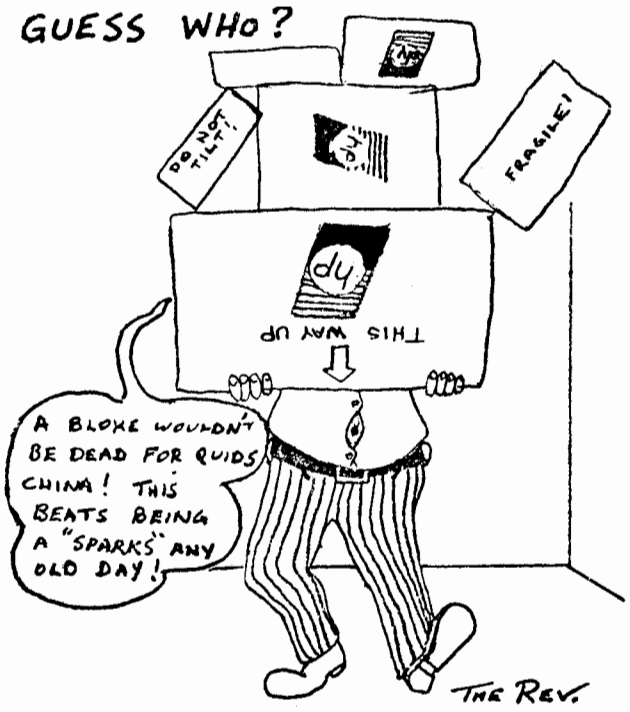
IT'S THE DRIVER!

It isn't the car that begins to whine,
When forced to stop for an old stop sign –
It's the driver.

It isn't the car that takes a drink,
Then quickly loses its power to think –
It's the driver.

It isn't the car that fails to heed
The dangers of reckless, discourteous speed –
It's the driver.

A car may be bent and twisted awry,
But it isn't the car that will have to die –
It's the driver!



Would anybody who witnessed the car accident at the corner of Weir Street and Tooronga Road last Friday night please keep it to themselves as my husband doesn't know about it yet. (Signed – Myrtle Entwhistle, Learner Driver.)

FACTS TO FIT

Tricia Coles — Order Processing Clerk.

Dianne Brockley — Administrative Managers Secretary.

WENDY MOSDEN. Wendy was born in Hillford, Essex and came to Melbourne from England several years ago. She was educated at Williamstown High School and then took a position with G.M.H. at Fisherman's Bend. Here she gained a wide experience of clerical procedures, particularly those relating to the maintenance of statistical records and consequent management reporting. Wendy, who is single, has just returned from a working holiday in New Zealand. She lists her interests as cars, boys, travel and generally enjoying herself.

JIM LANE. Jim originally hails from Warwickshire in England. He brought his family to Australia nine years ago and settled in Perth. His background as both an export sales clerk and as a purchasing officer suit his present position in Order Processing perfectly. Jim's interests are cricket and soccer, but he expects to soon be fully converted to Australian Rules football.

KARIN GURNEY. Karin is from Melbourne and was educated at Hawthorn West, her former home suburb. After completing a Business Course, she became the Typist-In-Charge with the Victorian Railways before going on a two year working holiday throughout Britain and Europe. She then returned to Melbourne and held positions with Union Fidelity and Plessey-Rola before joining HP. Karin, her husband and young son have just moved into a new home in Knoxfield. She lists her interests as squash and skating.

NORMA DOODSON. Norma and her husband have only been in Australia about six months. Formerly she lived in Liverpool, England and was educated at Maghule Grammar School. Before emigrating Norma worked in the Computer Centre of the Midland Bank. She likes to spend her leisure time horse riding at Phillip Island and playing folk music on her guitar.

TRICIA COLES. Originally from Perth, Tricia was educated at Mc.Robertson High School in Melbourne. She had wide experience in clerical work with several marketing organizations before joining HP. Tricia's family consists of two daughters, two cats, two birds and a poodle. She lists her spare time interests as Art and Literature. When asked what her ambition was, she replied "Heavens!" Whether this was meant simply as an exclamation or as a statement of VERY long term ambition has yet to be determined!

DIANNE BROCKLEY. Dianne is a Melbourne girl who attended Shelford C.E.G.G.S. before going to a Business College and then embarking on a career as a Secretary. Prior to joining HP, Dianne was secretary to senior executives in a legal firm and at T.A.A. Dianne, who was only recently married, spends much of her time renovating the house she and her husband have bought. When not working on the house she enjoys swimming, squash, skiing and reading.

Wendy Mosden — Data Centre Assistant.

Jim Lane — Order Processing Clerk.

Norma Doodson — Statistics Officer.

NEW FACES

PETER SHELLEY. Originally from Cooma in N.S.W., Peter was educated at North Sydney Technical College. He worked as a T.V. Technician with Channel 2 in Sydney before being drafted for National Service. Whilst serving in the Army, Peter spent 236 days in Vietnam working in the Signal Corps stationed at Vung Tau. When discharged, he remained within Vietnam and took a position with Page Communications Engineers. He then joined Weston Geophysical and sailed aboard the M.V. "BAYOU CHICO", a small ship doing seismic surveys to locate offshore oilfields. Here he worked extensively with mini-computers, analysing the data the ship collected. Peter was married just before joining HP and has an active interest in photography. His ambition is to go on an extended tour of Europe.

KAREN EDYE. Karen is from Lismore in Northern N.S.W., and after completing her education there, shifted to Sydney where she spent some years as a nurse. Following this she joined the Skil-Sher group in a secretarial capacity. Her combined medical and secretarial experience make her ideally suited for her new position as secretary to Mike Muller. Karen leads a very active life in her leisure time .... her interests include squash, gymnasium, judo and water-skiing.

Peter Shelley — Data Product Service Technician.

Karen Edye — Medical/Analytical Secretary.

arol Streames — Systems Integration Centre Secretary.

John Waters — Warehouseman.

Margot Darlison — Secretary and Sales, Hand-Held Calculators.

DAVID CHAMBERS. David is the new manager of our Perth office. David is married and has six children. Originally from Sussex, he has been several years in Western Australia and holds a Diploma of Electronic Engineering from the Perth Technical College. Before joining HP, David was the manager of Pretron Electronics. During his spare time he likes to go swimming and cycling with his family.

CAROL STREAMES. Originally from Essex, Carol came to Australia quite early in life and completed her education at Belmont High School in Geelong. She is single and has travelled throughout most of Australia. Prior to joining HP, she held several different types of positions in various cities; as a Telex Operator, a Children's Nurse and in secretarial positions in such Companies as C.B.H., Ingram Contractors and E.M.I. Carol's interests are horse riding, jazz ballet, skiing and showing her pedigreed Basset Hound.

JOHN WATERS. John is a single man and originally from Melbourne where he was educated at Oakleigh Technical School. Before joining HP he was a bookbinder with an educational publisher, gained warehousing experience with a packaging company and also sold radio and television sets with a large retailer. His hobbies are music and photography and his more active interests include swimming and trampolining.

MARGOT DARLISON. Margot is a Melbourne girl who Matriculated from Dandenong High School and them completed a Business course at the Caulfield Institute of Technology. After graduating she worked with World Travel Service and with MacMillan and Company doing various types of work such as editing, credit control and travel work.

THE HP AUSTRALIA ATOMIC CLOCK

Since time immemorial and since man first realised that he did different things during the night than those which he did during the day, he has required to know the time with varying degrees of precision. Most of us, when we ask for the time, are content with an answer which is accurate to a few seconds. At the recent Olympic games held in Munich, the winner of one of the swimming events was separated from his nearest competitor by only one-thousandth of a second, but in many areas of modern science, technology and industry, the question of accurate timing entails measurements to perhaps a millionth of a second or even a billionth of a second.

For many centuries the time of day was based on the Earth's rotation on its own axis with respect to the sun. A day was defined as the length of time required for the Earth to make one complete revolution on its axis and the second was defined to be one 86,400th of a day. As the science of making astronomical observations progressed, it became evident that this definition of the day did not represent a uniform time scale, and so began the pursuit of some invariant quantity in nature which could supply us with such a uniform time scale. Of the clocks based upon sound physical principles, the pendulum clock reigned supreme for many years, and in fact is still in use in some countries of the world, mainly as a standby device.

These clocks, which are regulated by adjustment of small weights on their pendulums, can be kept within an accuracy scale of one twentieth of a second per day; however to maintain this sort of accuracy requires continuous measurement of temperature and air pressure from which the size of the weights to be added to the pendulum is calculated. Allowance for the effects of tides must also be made to maintain this accuracy.

The next dramatic increase in accuracy was made possible by the development of the quartz crystal oscillator. Here, a carefully cut piece of quartz is sandwiched between two metal plates. While held in this manner, the quartz crystal is capable of mechanically vibrating when an electrical voltage is applied between the two plates. The rate of vibration of the quartz plate, also called the frequency of vibration or simply the frequency, is exceedingly constant in a well-designed quartz crystal oscillator. It is this almost constant rate of vibration or frequency which makes the crystal oscillator useful as a clock.

To see why this is so, suppose we have a crystal oscillator whose frequency is one million per second, that is, the crystal vibrates one million times per second. Now let us apply the output of the crystal oscillator to an electronic counting circuit. In this case we will make the counting circuit one which accepts one million input vibrations and gives out one vibration for each of the million input vibrations.

Since the crystal oscillator is supplying one million vibrations per second, the output from the electronic counter will be one millionth of this, or one vibration per second. This output could then be applied to a solenoid which drives the second hand of a clock. We thus have a clock which is controlled by the frequency of vibration of quartz plate. This frequency can be adjusted by mechanical and electrical means to produce a clock which would have an error of only one second in three hundred years.

Although the crystal oscillator gives good frequency stability, it suffers from the disadvantage that it must be set and measured against astronomical observations. Once set, however, its performance can be very predictable.

During the period of the development of the crystal oscillator, the science of atomic physics was progressing at a very rapid rate. Many universal constants of nature were discovered and their values measured. It was soon apparent that a clock which was governed by these universal constants of the atom would be capable of maintaining time to a hitherto undreamed of precision.

The HP model 5061A Caesium Beam is such a clock. Its operation depends upon the atomic properties of caesium, a silvery metal which is liquid at room temperature. In the broad concept, an atom consists generally of some electrically charged particles and some uncharged ones. The relatively light negatively charged particles, called electrons, revolve around a "nucleus" consisting of the more massive, positively charged particles known as protons, together with the uncharged particles called neutrons. The motion is similar to that of the Earth and planets revolving around the sun, the sun being represented by the nucleus, and the Earth and planets representing the electrons. The paths followed by the electrons are called orbits and the number of electrons and their orbits are different for every element. No two elements have the same configuration of electrons!

In the case of caesium there are a total of 133 orbital electrons, but we are only interested in the motion of one of these. The first 132 electrons have their orbits arranged in "closed shells", and interference with them requires very high energies; but the one electron whose orbit remains outside these "closed shells" is much more amenable to outside influence. It is this electron which gives rise to the effects necessary to provide us with our atomic clock. This particular electron is called the "Valence" electron, and not only revolves around the "nucleus", but also spins on its own axis. This spinning motion makes the electron behave as if it were a tiny magnet, and thus we can influence it by bringing a magnet near it. In a similar manner to this "Valence" electron, the "nucleus" also behaves like a small magnet. So the total magnetic effect is the sum of both these magnetic effects.

The relative direction of these two magnetic effects is governed by a definite set of rules, which, in effect, say that only certain discrete relative directions are possible. To change the relative directions of the two magnetic effects requires some energy, and the amount of energy required can only be absorbed when it is supplied at a very well defined frequency. Thus, if we supply energy at this frequency, we will induce a change in the relative direction of the "nucleus" and "Valence" electron magnetic effects.

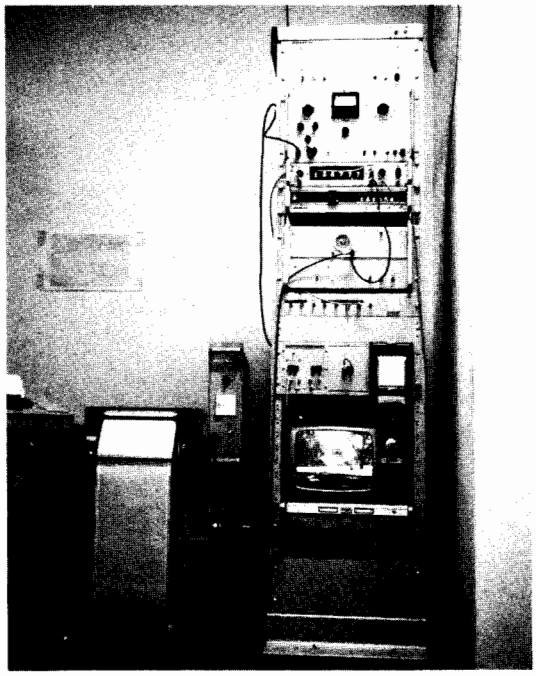
The frequency required to make a transition from one relative direction to another is therefore related to effects in the atom itself, and these are extremely constant.

We can now begin to see just how these effects can provide us with our atomic clock. A quantity of caesium is placed in a small electric furnace and heated until it becomes gas. The caesium atoms are then discharged through a small opening in the furnace into a long tube. They travel down the tube in a beam, which is first passed through the field of a magnet which acts to select from the beam only atoms which have their "Valence" electron and "nucleus" magnets in certain directions. The selected atoms then pass through a section of the long tube which is exposed to high frequency radio waves, and finally pass through a second magnet, just like the first, towards a detector.

If the high frequency radio wave is of the correct frequency, then, as discussed earlier, it will induce a change in the magnetic directions of the "Valence" electron and "nucleus".

The detector and second magnet are adjusted so that only atoms which have undergone this change will reach the detector, thus producing an electrical output from the detector

In the Hewlett-Packard 5061A atomic clock, this electrical output is used to adjust a crystal oscillator which controls the frequency of the applied radio wave in such a way that the detector output is always at its maximum. In other words, the frequency of the crystal oscillator is maintained at the frequency which allows the atomic transition to take place. It now remains to add an electronic counting circuit and indicating clock, just as was done with the crystal clock, to complete our atomic clock.



The Caesium Beam Equipment in the HP Standards Laboratory.

The 5061A Caesium Clock which is maintained in the Standards Laboratory at Weir Street, was measured with respect to the United States Naval Observatory Master Clock on 12th. February, 1973, and was found to be about half of a millionth of a second slow. It is expected that we will be able to maintain our clock within about 20-30 millionths of a second over a period of a year. This represents an error of about 1 second in 30,000 years.

Contrary to some opinions, the TV receiver in the Standards room is **not** for keeping Standards Laboratory staff up to date on current TV programmes. It is used for making comparisons of our Caesium Clock with several other owners of similar clocks. The comparisons are made on a daily basis, allowing the day-to-day performance to be continually monitored.

IAN RICHARDS

FROM THE MANAGING DIRECTOR

Elsewhere in this issue are references to the growth with what appear to be some rather startling numbers for the Australasian Area. Perhaps you would be interested in some possible future statistics.

The company will, in all likelihood, pass the $1,000,000,000 order level during 1976 and by 1985 it's not too unrealistic to consider ICON sales amounting to the same figure with Europe at $2,000,000,000. Sales for first quarter of FY73 were greater than total sales for 1964.

Where does Australia and New Zealand fit into this pattern?

During the recent ICON General Managers' Meeting, Bill Doolittle, Vice-President International Operations made a presentation which included some linear regression slides; our performance 1955 through 1972 has tracked remarkably close to the projection line.

Meeting our quota of a little more than $10 million this year will maintain our normal pattern. By 1976, we will double this figure and by 1980 will probably pass the $40 million mark.

Bill Doolittle's major theme was "THINK BIG" and I am sure you will all see the necessity of so doing with this possible growth pattern.

Another theme of the Doolittle presentation was "LET'S BE SMART".

We can all be smarter in a number of different ways, for example we can be smarter in the people we choose for the positions that become vacant during the period of rapid growth in ensuring that we select people who have a growth potential ahead of them. We can be smarter in our facilities planning; there are probably smarter ways of handling order processing.

I am sure that you can all think of many ways in which this slogan could fit a number of areas within HP Australia.

John Warmington

J. WARMINGTON

ORGANIZATIONAL CHANGES

In line with the policies published in the first edition of "DEPTH" of April 1970, we outline below two up-dated "organizational trees." Our purpose in doing so it to ensure all employees, both old and new, are aware of the changes currently taking place.