



EMBARGOED AGAINST DELIVERY

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PRIME MINISTER

SPEECH BY THE PRIME MINISTER, THE HON R. J. HAWKE AC, MP
TO THE NATIONAL SCIENCE SUMMER SCHOOL
CANBERRA
16 JANUARY 1984

EXCELLENCY, LADIES AND GENTLEMEN,

I WAS DELIGHTED TO RECEIVE THE INVITATION TO JOIN YOU
AT THIS OPENING OF THE FIRST NATIONAL SCIENCE SUMMER SCHOOL.

THE INITIATIVE IN BRINGING TOGETHER SO MANY STUDENTS
FROM ALL PARTS OF AUSTRALIA AND OVERSEAS IS BOTH TIMELY
AND NEEDED.

A GATHERING OF SO MANY STUDENTS FROM SUCH DIVERSE
AREAS AND BACKGROUNDS MUST BE AN ENRICHING EXPERIENCE FOR
ALL INVOLVED.

IN MY OWN EXPERIENCE I HAVE FOUND SUCH GATHERINGS
PROFOUNDLY IMPORTANT - FOR THOSE WHO ARE OPEN TO IT,
HORIZONS CAN BE LIFTED, NEW WORLDS REVEALED AND THE CHALLENGE
OF THE FUTURE DEFINED.

THIS GATHERING SHOULD BE NO EXCEPTION.

PARTICIPANTS CAN EXPECT TO MEET MANY LEADERS OF THE AUSTRALIAN COMMUNITY AND WILL LEARN A GREAT DEAL ABOUT AUSTRALIAN AND WORLD SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS.

YOU WILL HAVE AN UNPARALLELED OPPORTUNITY TO LEARN OF THE ROLE OF GOVERNMENT AND SCIENCE AS THEY AFFECT NOT ONLY YOUR EVERYDAY LIFE BUT ALSO YOUR FUTURE.

FROM THIS SUMMER SCHOOL YOU SHOULD ALL EMERGE BETTER EQUIPPED TO PLAN EFFECTIVELY FOR YOUR EDUCATIONAL AND VOCATIONAL FUTURES.

THAT THE CANBERRA DEVELOPMENT BOARD AND NATIONAL SCIENTIFIC BODIES SUCH AS THE ACADEMY OF SCIENCE, THE ACADEMY OF TECHNOLOGICAL SCIENCE, ANZAAS, THE AUSTRALIAN NATIONAL UNIVERSITY, AND CSIRO - IN CO-OPERATION WITH ROTARY, THE SCIENCE TEACHERS ASSOCIATION, THE QUEEN ELIZABETH II TRUST, AND THE DEPARTMENTS OF EDUCATION IN STATES AND TERRITORIES - HAVE ALL CO-OPERATED SO EFFECTIVELY AND MADE THIS SUMMER SCHOOL POSSIBLE IS DESERVING OF THE HIGHEST PRAISE.

ALL THOSE INVOLVED MUST BE COMMENDED FOR THEIR EFFORTS.

AUSTRALIA NEEDS CO-OPERATIVE ACTION OF THIS KIND.

WE NEED TO MARSHALL OUR HUMAN RESOURCES AS EFFECTIVELY AS WE CAN.

THE OPPORTUNITY PRESENTED BY THIS SUMMER SCHOOL TO ALERT OUR YOUNG PEOPLE TO WHAT WE AS A NATION MUST DO TO SECURE A HAPPY AND PROSPEROUS FUTURE FOR OUR PEOPLE IS INVALUABLE.

THE SUCCESS OF THIS EXERCISE WILL BE MEASURED BY THE HEIGHTENED AWARENESS OF ALL INVOLVED AND BY THE QUESTIONS, IMPRESSIONS AND IDEAS GENERATED IN EACH PARTICIPANT'S MIND BY THE UNIQUE EXPERIENCE EACH IS PRIVILEGED TO SHARE.

I SHOULD NOT BE SURPRISED IF MANY OF YOU CAME AWAY FROM THIS SUMMER SCHOOL IMPRESSED BY THE SPEED AND COMPLEXITY OF THE CHANGES ASSOCIATED WITH CONTEMPORARY SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT.

THE CONSEQUENCES OF MANY OF THESE CHANGES ARE STILL ONLY VAGUELY APPRECIATED BY MANY IN OUR COMMUNITY - THE CONFUSED AND SOMETIMES FEARFUL RESPONSE WE SOMETIMES SEE ONLY SERVES TO UNDERLINE THE NEED TO RAISE THE LEVEL OF COMMUNITY UNDERSTANDING OF THE TECHNICAL AND SOCIAL ASPECTS OF SCIENCE AND TECHNOLOGY.

I CAN THINK OF NO BETTER PLACE TO START THAN HERE WITH AND THROUGH YOU - THE YOUNGER GENERATION.

THROUGH YOU I WOULD BE HOPEFUL THAT TRULY AUSTRALIAN APPROACHES AND SOLUTIONS MIGHT BE DEvised.

THERE IS A FINE BALANCE TO BE STRUCK HERE.

ADVANCES IN MICROELECTRONICS HAVE BEEN VAST AND MANY PEOPLE, ESPECIALLY IN YOUR AGE GROUP, HAVE HAD LITTLE DIFFICULTY IN ADAPTING TO AND ACCEPTING THE NEW PRODUCTS AND PROCESS.

FOR OTHERS HOWEVER MANY OF THE NEW DEVELOPMENTS - WHILE PERHAPS BRINGING SOME BENEFITS - HAVE BROUGHT NEW PROBLEMS WHICH SHOULD BE RECOGNISED BY THE COMMUNITY AT LARGE.

I WAS STRUCK RECENTLY BY COMMENTS OF A MR JOSEPH KROGER, PRESIDENT OF COMPUTER SYSTEMS AT SPERRY CORPORATION, QUOTED IN THE AUSTRALIAN; HE OBSERVED THAT:

"AS BREAKTHROUGH PILED UPON BREAKTHROUGH (IN 1983), IT BECAME OBVIOUS THAT THE MUCH VAUNTED COMPUTER REVOLUTION IS HAVING AND WILL CONTINUE TO HAVE A MORE PROFOUND EFFECT UPON OUR DAILY LIVES THAN ANYONE EVER DREAMED...

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"WE HAVE PROGRESSED FROM COMPUTERS THAT CALCULATE AND STORE DATA TO COMPUTERS THAT ALMOST REASON AND CERTAINLY SOLVE PROBLEMS... THE IMPLICATIONS (OF EXPERT SYSTEMS) FOR PROBLEM SOLVING IN SUCH DIVERSE FIELDS AS MATHEMATICS, SCIENCE AND ENGINEERING ARE STAGGERING. COMBINE THESE SYSTEMS," SAID MR KROGER, "WITH MECHANICAL CREATURES THAT OPERATE INDEPENDENTLY - ROBOTS - AND YOU'VE ADDED A WHOLE NEW DIMENSION TO THE WORKPLACE, THE HOME, THE SCHOOL AND PRACTICALLY EVERY OTHER INSTITUTION."

COMPUTER-AIDED DESIGN AND MANUFACTURING, COMPUTER-ASSISTED DIAGNOSIS OF DISEASE AND THE PRESCRIPTION OF TREATMENT AND THE USE OF COMPUTERS IN THE MANAGEMENT OF BOTH PERSONAL AND BUSINESS ACCOUNTS, ARE APPLICATIONS WITH WHICH MOST OF US ARE FAMILIAR - TO THE POINT OF BEING "BLASÉ" ABOUT THEM.

WHAT IS LESS OFTEN RECOGNISED IS HOW THE COSTS ASSOCIATED WITH COMPUTER TECHNOLOGY HAVE FALLEN IN THE RECENT PAST. MR KROGER MAY HAVE BEEN EXAGGERATING BUT HE WAS PROBABLY NOT FAR WIDE OF THE MARK WHEN HE OBSERVED:

"COMPARED TO THE COST OF A GOOD TRANSISTOR 20 YEARS AGO (SOMEWHERE BETWEEN \$1 AND \$10), A MORE POWERFUL TRANSISTOR IN A NEW COMPUTER CHIP COST THE EQUIVALENT OF ONE-HUNDREDTH OF A CENT. HAD THE AUTOMOBILE INDUSTRY," HE CONCLUDED, "BEEN ABLE TO MAINTAIN A SIMILAR RATIO OF IMPROVED PRICE-PERFORMANCE, YOU AND I COULD BUY A ROLLS-ROYCE FOR \$2.50 AND GET OVER 2 MILLION MILES TO THE GALLON."

WHAT THIS ALL MEANS IS NOT THAT WE CAN EXPECT DRAMATIC ECONOMIES IN THE MOTOR-VEHICLE INDUSTRY (ALTHOUGH THE MANUFACTURERS IN THAT INDUSTRY WOULD BE AMONG THE FIRST TO ADMIT THAT THEIR ADOPTION OF ADVANCES MADE POSSIBLE BY THE NEW TECHNOLOGIES IS GOING TO BE CRUCIAL TO THEIR LONG-TERM COMPETITIVENESS AND SURVIVAL), BUT THAT ALL OF US CAN ASSUME RELATIVELY EASY ACCESS TO THE PRODUCTS, PROCESSES AND SYSTEMS ASSOCIATED WITH COMPUTER TECHNOLOGY.

WHETHER WE LIKE IT OR NOT WE MUST ALL LEARN TO ADJUST TO THE REALITIES OF THE COMPUTER AGE.

PERSONALLY I SEE THIS AS BEING CRUCIAL TO OUR FUTURE PROSPERITY AS A NATION.

MY GOVERNMENT WAS ELECTED TO GET AUSTRALIAN MOVING AGAIN; TO STEM AND THEN TO REVERSE THE DECLINE IN EMPLOYMENT; TO RAISE THE LIVING STANDARDS OF AUSTRALIANS; AND TO RESTORE AUSTRALIANS' SENSE OF THEIR NATION AS A FAIR AND EQUITABLE SOCIETY.

IF WE ARE GOING TO SUCCEED, THEN WE MUST SECURE STRONG AND STEADY ECONOMIC GROWTH OVER LONG PERIODS.

THE PROGRESSIVE INTRODUCTION OF PRODUCTIVE NEW TECHNOLOGIES IS AN ESSENTIAL PREREQUISITE FOR THE ACHIEVEMENT AND MAINTENANCE OF HIGH GROWTH RATES.

NONE OF US CAN AFFORD TO BE COMPLACENT IN THE FACE OF A RECENT SURVEY BY THE EUROPEAN MANAGEMENT FORUM WHICH PORTRAYED AUSTRALIA AS A RICHLY ENDOWED ECONOMY SHOWING LITTLE INNOVATIVE FLAIR AND POOR PRODUCTIVITY LAGGING BEHIND COUNTRIES WHICH HAVE OVERCOME THE HANDICAP OF SCARCE RESOURCES WITH A HIGH-QUALITY WORKFORCE.

AUSTRALIA SIMPLY CANNOT HOPE TO COMPETE EFFECTIVELY (AND THEREFORE TO GROW VIGOROUSLY) IN CIRCUMSTANCES WHERE 25 PER CENT OF MACHINE TOOLS IN USE IN AUSTRALIA ARE UNDER TEN YEARS OLD COMPARED TO MORE THAN 60 PER CENT IN JAPAN.

BOTH AUSTRALIAN MANAGEMENT AND LABOUR MUST BEAR RESPONSIBILITY FOR THIS PARLOUS SITUATION.

MUCH GREATER EMPHASIS MUST BE PLACED ON INDUSTRIAL RESEARCH AND DEVELOPMENT, SECONDARY PROCESSING AND ON WORKER PARTICIPATION IF WE ARE TO GET AHEAD IN AN INTENSELY COMPETITIVE WORLD.

THE TASK BEFORE US IS TO MAKE TECHNOLOGY WORK FOR AUSTRALIA.

THERE IS NO ESCAPING THE FACT THAT INDUSTRIAL INNOVATION IS ESSENTIAL TO AUSTRALIA'S FUTURE WELL-BEING, NOT ONLY IN NEW INDUSTRIES, BUT THROUGHOUT ESTABLISHED INDUSTRIES AS WELL.

OUR MAJOR COMPETITORS, ESPECIALLY THOSE WITHIN OUR OWN REGION, ARE UNDERTAKING NEW LONG-TERM INVESTMENTS, ADOPTING NEW BUSINESS STRATEGIES AND APPLYING NEW TECHNOLOGIES.

AUSTRALIA'S LOCATION IN THE MOST DYNAMIC,
FORWARD-LOOKING PART OF THE WORLD IMPOSES ON OUR INDUSTRIES
A NEED TO DEVELOP NEW TECHNOLOGIES - NEW PRODUCTS AND
PROCESSES - IF WE ARE TO COMPETE EFFECTIVELY.

THE UPGRADING OF AUSTRALIA'S TECHNOLOGICAL BASE
IS ESSENTIAL IF OUR COMPETITIVE PERFORMANCE IS TO BE
IMPROVED.

AND THAT IS WHERE YOU ALL COME IN.

WE ARE COUNTING ON YOUR GENERATION TO BRING THE
FLAIR, UNDERSTANDING AND TECHNICAL ABILITIES NEEDED
TO ENSURE THAT WE CAN MATCH AND SURPASS THE BEST THE
REST OF THE WORLD CAN PRODUCE.

THE CHALLENGE IS A TOUGH ONE BUT IT IS ABSOLUTELY
VITAL TO THE QUALITY OF AUSTRALIA'S LONG-TERM PROSPECTS
THAT IT BE MET.

THIS IS NOT TO UNDERESTIMATE THE DIFFICULTIES.

THERE ARE, FOR EXAMPLE, CONSIDERABLE SOCIAL
IMPLICATIONS ASSOCIATED WITH TECHNOLOGICAL CHANGE.

WE HAVE ALL HEARD HOW NEW TECHNOLOGIES WILL HELP OUR WORK AND LEAD TO INCREASED PRODUCTIVITY AND LEISURE TIME.

AT THE SAME TIME WE ARE SEEING AN INCREASING NUMBER OF INDUSTRIAL DISPUTES CENTRED ON THE INTRODUCTION OF NEW TECHNOLOGIES.

IN SOME CASES THIS IS DUE TO IGNORANCE OF HOW THE NEW PROCESS IS TO OPERATE.

IN MANY INSTANCES, HOWEVER, IT IS THE RESULT OF WELL-FOUNDED FEARS THAT EXISTING JOBS WILL BECOME REDUNDANT AND CONSEQUENTLY THERE WILL BE INCREASED UNEMPLOYMENT IN THOSE OCCUPATIONS.

IT IS FOR THIS REASON THAT THE GOVERNMENT PLACES A VERY HIGH PRIORITY ON THE TRAINING AND RETRAINING OF WORKERS TO FILL THE NEW JOBS WHICH WILL BE CREATED BY TECHNOLOGICAL ADVANCE.

WE ARE ALSO VERY CONSCIOUS OF THE NEED TO MONITOR THE IMPACT OF NEW TECHNOLOGIES ON WORKERS' HEALTH.

TOO OFTEN IN THE PAST, PROCESSES HAILED AS GREAT ADVANCES HAVE LATER BEEN SHOWN TO BE HAZARDOUS, IN SOME CASES DEADLY, TO THOSE WORKING WITH THEM.

MY GOVERNMENT IS CONCERNED TO ENSURE THAT THIS SHOULD N'T HAPPEN AGAIN.

TECHNOLOGICAL CHANGE ALSO HAS THE POTENTIAL TO LEAD TO EVEN GREATER INEQUALITIES IN OUR SOCIETY - BETWEEN THOSE WHO UNDERSTAND AND CAN WORK WITH THE NEW TECHNOLOGIES AND THOSE WHOSE JOBS ARE DESTROYED BY THEM.

IT IS OUR RESPONSIBILITY AS A COMMUNITY TO ENSURE THAT THIS DOESN'T OCCUR AND THAT BENEFITS ARE SHARED BY ALL MEMBERS OF OUR SOCIETY.

I STRONGLY BELIEVE THAT OUR BEST OPPORTUNITY FOR MEETING THE CHALLENGES OFFERED BY TECHNOLOGICAL CHANGE LIES IN CONSULTATION AND DISCUSSION BETWEEN ALL CONCERNED - BETWEEN GOVERNMENTS, EMPLOYERS, WORKERS AND THE COMMUNITY GENERALLY.

ONLY IN THIS WAY IS IT LIKELY THAT THE COSTS AND BENEFITS OF NEW TECHNOLOGIES WILL BE FULLY UNDERSTOOD AND DISTRIBUTED EQUITABLY THROUGHOUT THE COMMUNITY.

IF WE ARE TO KEEP UP WITH THE PACE OF CHANGE, AUSTRALIA'S WORKFORCE IN THE FUTURE WILL HAVE TO BE INCREASINGLY FLEXIBLE, ABLE TO ADAPT READILY TO NEW TECHNOLOGIES.

TO ENSURE THIS YOUR EDUCATION AND TRAINING MUST BE CAREFULLY GEARED TO CONTEMPORARY AND FUTURE NEEDS.

THIS IS ESSENTIAL IF YOU ARE TO REALISE YOUR POTENTIAL AS INDIVIDUALS AND TO MAXIMISE THE BENEFIT TO SOCIETY OF YOUR CAPABILITIES.

OUR EDUCATION SYSTEM WILL HAVE FAILED IF IT DOES NOT EQUIP YOU WITH THE BROAD SKILLS AND UNDERSTANDING NECESSARY TO COPE WITH THE PROCESS OF TECHNOLOGICAL CHANGE.

THIS IS OF OBVIOUS RELEVANCE TO ALL OF YOU GATHERED HERE TODAY. BUT I ALSO HAVE IN MIND OTHERS IN YOUR GENERATION WHO ARE PERHAPS LESS FORTUNATE THAN YOURSELVES.

MY GOVERNMENT IS INTENSELY AWARE THAT CHANGES IN SOCIAL MORES, IN TECHNOLOGY AND IN THE ECONOMIC SITUATION HAVE ALL HAD THEIR EFFECT ON YOUNG PEOPLE.

WE ARE VERY AWARE THAT YOUNG PEOPLE ARE INCREASINGLY EXPRESSING THEMSELVES IN A NUMBER OF WAYS AND AREAS THAT DIFFER FROM THOSE OF THE EARLY SEVENTIES AND THAT THIS IS HAVING A SIGNIFICANT IMPACT ON ATTITUDES AND ASPIRATIONS.

INCREASINGLY I SEE YOUNG PEOPLE ACTIVELY CONCERNING THEMSELVES WITH SUCH AREAS AS ENVIRONMENTALISM, THE STATUS OF WOMEN, THE PEACE MOVEMENT, THE RIGHTS OF ABORIGINALS, ALTERNATIVE LIFESTYLES, THE NEEDS OF STUDENTS AND THE UNEMPLOYED.

IN MANY CASES YOUNG PEOPLE ARE CONCERNED MORE WITH THE NATURE OF PERSONAL AND COMMUNITY RELATIONSHIPS THAN WITH THE FORMAL STRUCTURES IN WHICH SUCH RELATIONSHIPS HAVE TENDED TO OPERATE IN THE PAST. THEY SEEM PARTICULARLY CONCERNED TO PARTICIPATE IN DECISION-MAKING AND TO DEMOCRATISE PROCESSES SUCH AS EDUCATION, EMPLOYMENT AND TRAINING.

THESE TRENDS, WHILE PERHAPS PUTTING PRESSURE ON ESTABLISHED ATTITUDES AND INSTITUTIONS, ARE ENCOURAGING.

THEY REFLECT THE VITALITY OF OUR YOUTH AND SUGGEST A GENUINE INTEREST IN THE QUALITY AND CHARACTER OF AUSTRALIAN LIFE.

PERHAPS MOST IMPORTANTLY THEY HIGHLIGHT A REFUSAL TO ACQUIESCE IN THE STATUS QUO AND A GENUINE COMMITMENT TO BUILDING A BETTER LIFE FOR THEMSELVES AND THOSE AROUND THEM.

WE NEED SUCH COMMITMENT.

IN THIS REGARD I FOUND IT INTERESTING THAT SOME RECENT RESEARCH SUGGESTED THAT, WHILE YOUNG PEOPLE TEND TO SEE A GOOD DEAL OF THEIR SCHOOL EXPERIENCE AS IRRELEVANT TO THEIR REAL NEEDS, EMPLOYMENT WAS SEEN AS IMPORTANT AND DESIRABLE.

CONTRARY TO POPULAR BELIEF, THERE WAS NO EVIDENCE OF A WEAKENING OF THE "WORK ETHIC" AMONG YOUNG PEOPLE WHO RATHER ASSOCIATED EMPLOYMENT WITH PERSONAL DEVELOPMENT AND SELF-ESTEEM.

CONSCIOUS OF THIS, AND DEEPLY CONCERNED ABOUT CONTINUING VERY HIGH RATES OF YOUTH UNEMPLOYMENT AND DEEPLY WORRIED ABOUT THE LONGER-TERM IMPLICATIONS OF ALARMINGLY LOW PARTICIPATION RATES IN AUSTRALIA'S UPPER SECONDARY AND TERTIARY EDUCATION, THE GOVERNMENT HAS EMBARKED ON A MAJOR REVIEW OF ITS YOUTH POLICIES AND PROGRAMS.

WE ARE LOOKING VERY CAREFULLY AT WAYS IN WHICH THE NEEDS OF YOUNG PEOPLE CAN BE BETTER MET, INCLUDING ALTERNATIVE POLICIES, PROGRAMS AND ARRANGEMENTS IN EDUCATION, TRAINING, EMPLOYMENT AND INCOME SUPPORT.

I EXPECT THE RESULTS OF THIS REVIEW TO BE AVAILABLE BY MID-YEAR.

IN THE MEANTIME I WOULD URGE ALL THE STUDENTS AMONG US HERE TODAY TO CONSIDER VERY CAREFULLY NOT ONLY THE USE TO WHICH THEIR PARTICIPATION IN THIS SUMMER SCHOOL CAN BE PUT, BUT MORE GENERALLY, TO REGARD THEIR FUTURE EDUCATION AS A MEANS OF, AMONG OTHER THINGS, EQUIPPING THEMSELVES, THE YOUNGER GENERATION, AND HENCE THE NATION, TO SURVIVE AND COMPETE IN THE ERA OF NEW TECHNOLOGY.

IN THE PROCESS I WOULD HOPE THE EDUCATION SYSTEM ITSELF IS ADAPTED AND GEARED TO MAKING GENUINE PROVISION FOR OUR NATION'S REAL NEEDS AT THE SAME TIME AS OFFERING TRULY SATISFYING EXPERIENCES TO ALL THOSE CONCERNED.

WE OWE THIS TO OURSELVES; WE OWE IT TO OUR STUDENTS.

TO THE EXTENT WE ARE SUCCESSFUL WE WILL BE A MORE PROSPEROUS, SUCCESSFUL NATION.
