Of Mud and Dreams
DEDICATED TO THE LATE HONOURABLE
DANA PORTER

First Chancellor of the University of Waterloo

From 1955 when the embryo University of Waterloo (then the Associate Faculties of Waterloo College) was first able to put its aims and aspirations into words, the Honourable Dana H. Porter, in varying ways, was associated with it. While serving as Treasurer for the Province of Ontario and, later, as Chancellor of the University, he was familiar with the "dreams" of those who started and continued to build the University.

During this first decade of its history, he also became familiar with the "mud," a chronic condition on the campus of the University of Waterloo and an inevitable product of its continuous construction programme.

A man whose interest in scholarship never wavered, he took his Master's degree at Oxford before returning to Canada to attend Osgoode Hall. He was a practising lawyer in Toronto for eighteen years, and entered the political arena in 1943. Elected to the Ontario Legislature, he was appointed Parliamentary Secretary to the Prime Minister and a year later became a member of the Cabinet, as Minister of Planning and Development. Subsequently he served as Provincial Secretary, Minister of Education, Attorney General and Provincial Treasurer. It was during his service as Provincial Treasurer that he first became acquainted with the University of Waterloo, and in May of 1957 he supported the awarding of a founding grant from the Province to initiate the engineering programme.

Dr. Porter left politics in 1958 when he was appointed Chief Justice of Ontario; but he took with him his interest in the academic philosophy of the new college at Waterloo. The following year when the Associate Faculties of Waterloo College became incorporated as the University of Waterloo, under a private bill, it was most fitting that he should be appointed its first Chancellor.

He was installed as Chancellor on June 18, 1960, and held this post for the next six years. As Chancellor, Dr. Porter was the titular head of the University, to which office he brought deep understanding, prestige and dignity. His continuing interest
in higher education was further recognized when the Minister of Education appointed him Chairman of the Advisory Committee on University Affairs in 1961.

Following the completion of his term as Chancellor, and at the convocation when the University conferred upon him an honorary Doctor of Laws degree, he suggested to the graduates that they might find their lives so “filled with demands of many kinds that the chance of reflection tends to be squeezed out.” “Let not this happen!” Dr. Porter pleaded. “Stand firm. Reflection is a refreshment after labour. It should be nurtured.”

Dana Porter’s untimely passing brought a sense of great loss to the many persons at Waterloo who had come to know him well. He was a man of great gifts, remarkable for his strength of character, gentility, his sympathetic interest in people and his awareness of the needs of the contemporary world.

His continuing interest in the affairs of the University is expressed in his request that the Dana Porter Library Fund at Waterloo be established. The Fund will serve as a continuing tribute to his scholarly interests in general as well as to his enthusiasm for the University with which he was so intimately associated in its first decade.
When I was asked by my former colleagues at the University of Waterloo to attempt to chronicle its first ten years it appeared as both a flattering and a formidable task. I only agreed to take it on because I knew I could count on almost every one named in this book (and many more besides) to provide the vast amount of information—statistical, anecdotal and speculative—out of which the story would emerge. I am very grateful to all of them for their co-operation and assistance.

I am particularly grateful to Very Reverend Father Siegfried who has read the entire manuscript.

I thank Mrs. Mary Busbridge, secretary to the President, who typed (and often corrected) the several drafts of the manuscript, and “the girls”—especially Joan, Ina and Ruth—who helped in so many practical ways.

As usual, the inevitable omissions and errors are the sole responsibility of the author.

On one point only would I stand implacable: this book is the best the author can do to exemplify the motto of the University—Concordia Cum Veritate.

JAMES SCOTT

Seaforth in Huron
May, 1967
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... ephemeral creature made of mud and dream. But I feel all the powers of the Universe whirling within me... And I strive to signal my companions... what I think this procession is and toward what we go.

Nicos Kazantzakis

This is another University of Waterloo "first". Like most of the "firsts" which have gone before—and undoubtedly like many which are yet to come—it is a matter of expediency, an expediency generated by success and achievement beyond the most optimistic of dreams. This year there is no place on the ten-year-old campus big enough to accommodate the graduating classes at their convocations. Common sense—a basic ingredient in the development at the University of Waterloo—says if you cannot hold convocation indoors, you must try to hold it outdoors.

But there are "fair weather" and "foul weather" plans. At the University of Waterloo, no one takes luck for granted.

Happily, the day is fair. There are 2000 people waiting in the stands at Seagram Stadium ("Home of the Warriors" it says in the big black and gold sign outside). They are all there: fathers, mothers, brothers and sisters; wives, sweethearts and would-be sweethearts; and friends, friends of the University and friends of the graduating students, and citizens of the Twin Cities (Kitchener and Waterloo) who still look with "mild surmise" at this thousand-acre campus with its $80,000,000 worth of land, building and equipment which but a few years ago had only one unfinished brown brick building and a few "temporary huts" on
this same site. (The two temporary huts are still in use but not easy to find in the great complex of modern buildings.)

Now the stirring strains of marching music come through the P.A. system. There is no mighty Casavant at the University of Waterloo yet; indeed there is no university hymn. Time and money have been expended on other, more essential things but some day and, if the pattern holds true, sooner than we think, the University will have them.

It is two-thirty p.m. The procession starts to move.

Rank upon rank, the black-gowned students march into the stadium. They look happy and relieved and a bit frayed at the edges (there were quite a few parties last night!) and they look young. They are not nearly so young as they were when they first registered in the more or less organized bedlam in the gymnasium three or four years ago. Sweet innocence may have fled but firm purpose has taken its place. They are more mature but they still step out with the buoyancy of youth which sees nothing but a bright and challenging world ahead of it. In the thrusting dynamic of the University of Waterloo no moss grows—neither does ivy and it is doubtful if it ever will. These young ones have absorbed the atmosphere of their university; forward looking as they are, they are a little impatient with the ceremonial bits of pomp and circumstance of graduation and yet they are a bit relieved that the University finally has a mace. These past years, as they readied for the future, they have come to realize how painfully slow it is to inch up the ladder to understanding and comprehension and they know now that if the ladder is not set firmly on the solid ground of scholarly authority it will topple over, long before the top is reached.

A mace, of course, is an authority symbol. In simplest terms its function at the head of this procession is to proclaim that the University of Waterloo has the properly constituted and sole authority to do what it is about to do—to confer degrees upon those whom it has selected by processes determined by the University itself. In university usage, however, the symbolism of the mace extends beyond its primary meaning. Dr. T. L. Batke,
chairman of the senate committee charged with having a mace designed for the University of Waterloo* explains it this way: "Universities have long ago acquired the wisdom to appreciate the deep and subtle connections between ceremonial symbol and reality."

The fifteen pound sterling silver mace we see today (designed by Eric Aldwinckle and produced by Harold Stacey) represents (in Dr. Batke's words) "unity amid diversity and tension in the creative process that strives to bring forth a new individual."† Appropriately enough the mace was presented to the University by the family of a man who combined many aspects of public service in his career—Stanley F. Leavine, medical doctor, mayor of Kitchener, member of the Legislative Assembly, founding member of the Board of Governors of the University and its first vice-chairman until his death in 1958.

Immediately behind the graduands are the people every university must have: representatives of the city councils of Kitchener and Waterloo, members of the Board of Governors of the University, members of the Boards of Governors of the federated and affiliated colleges, and the administrative officers of the University. Like policemen, most of these people find that their lot is not always a happy one. Most of them believe that higher education is essential to human survival, to our civilization and culture and to the growth and progress of our country, but they are inevitably anomalies. They are not practising academics, but academic endeavour cannot exist without them. Usually devoted to public service they constantly incur disfavour and criticism. Their role carries with it the unenviable duty of having to say "no." They are continually analyzed and criticized in newspapers, over the air, and in faculty common rooms. They are reported on, investigated by government commissions. They know only too well that you cannot please all the people all the time; on some dark days they wonder if you can ever please anybody any time.

†For a detailed description of the design of the mace and the armorial bearings of the university see Appendix.
Amongst them are some particularly interesting men. For example, there is Carl Pollock, a native of Kitchener with wide-ranging industrial interests there, a recent president of the Canadian Manufacturers’ Association and Vice Chairman of the Board of Governors. He is particularly alert today because he suspects (and he is right) that soon he will be asked to become Chairman of the Board. Already a very busy man he knows only too well how much University of Waterloo affairs can demand of him. But he already has a very heavy investment of his time and energy in the University. Long before the events which produced the University of Waterloo were even under way he had convened as Chairman of the Education Committee of the Chamber of Commerce, a meeting (in 1947) to explore the bringing together of the community’s existing institutions of higher education with a possibility of forming a university. Naturally he is a charter member of the board of governors of the University of Waterloo. As a citizen of the Twin Cities he has become identified with the University’s achievement. As a Canadian thoroughly familiar with and deeply involved in his country’s need for more brain power, he feels he must do all he can to further higher education. He knows the implications of taking on heavier responsibility on behalf of the University but he is going to accept the chairmanship of the board. Not far away from Pollock is William W. McGrattan, so young he looks almost mischievous and little wonder. He is the first alumni representative on the board of governors, a member of the first graduating class in engineering.

A goodly number of this group bear names which can be found far back in the history of Waterloo County. One of them is Kieth Hymmen, M.Sc. (Tor.). For three years he was Assistant Registrar at the University of Waterloo but he had to relinquish his association with the University when the people of Kitchener elected him mayor. Now he is the Member of Parliament for Waterloo North. He walks beside Keith Butler, M.L.A. The University has counted on and always receives strong support from the local members of the federal and provincial parliaments.

The Vice-President, Operations, A. K. Adlington, a graduate of
Western in economics and political science, walks at the head of the officers of the University. His face is grim. He appears to be calculating where he can cut down expenses the next time around for his “show.” Actually he is trying to look as if he didn’t remember the joke Ken Fryer told him in the robing room. It was a dandy. If Fryer doesn’t beat him to it, Adlington will tell it to everyone who enjoys a good laugh at the post-convocation reception. He’ll check out the sandwiches and cakes, too, of course. Food services is one of many departments reporting to him.

In the early years not many representatives from other Ontario universities attended University of Waterloo convocations. Its struggle for identity and its innovations were a bit suspect in an academic community which had not then quite grasped the full implications of the urgent demand for increased facilities for higher education. Today, as Ontario’s third largest university, Waterloo is undoubtedly respectable. There is a good quota of friendly visitors from other universities at this convocation.

Immediately behind them are members of the faculty of the University. The dazzling colour of hoods and gowns outshines the splendour of a peacock (more about peacocks later) but more significantly the multicoloured regalia tells the story of the relentless and never-ending search for scholars which is extended into the universities of North America, Great Britain and Europe and, indeed, into every corner of the free world. Seen together they affirm that scholarship knows no national boundaries, that the minds of men dedicated to getting a firmer hold on truth cannot be fettered by differences of race or creed.

And here is a curious thing: there are few white heads and no old faces in this group. This is a young faculty, right in its prime. Some of its members will grow old in the service of the University and because they have matured with it, their experience will be an asset but it takes more than ten years for that. There are some old timers (by U. of W. standards) but there are not more than a dozen men on the present faculty who can say that they were here when classes began in July of 1957. And in the same group there
are young men like Dr. R. C. Mullin who was the first man ever granted a degree by the University of Waterloo (an M.A. in mathematics*) and the first person to join the faculty with a graduate degree from the University. Since that time a substantial number of men who took their advanced work at Waterloo have remained to become members of the faculty. Some of them, like Mullin, who held a Master’s degree from Waterloo as their original qualification are now Ph. D.’s, also from Waterloo.

The Senate is large. Eighteen faculty representatives, as well as the Deans and the Principals of the Colleges; nine alumni representatives; and six representatives of the secondary schools of Ontario, under the charter of the University they represent the final authority in all matters of primary academic concern or as it is summed up in the charter “the Senate shall be responsible for the educational policy of the University.” Quite properly, at Waterloo with only three or four exceptions every member is either a practising academic or a graduate of the University.

Immediately after the Senate come the heads of the colleges of the University. St. Jerome’s, operated by the Roman Catholic order of the Congregation of the Resurrection, is federated with the University of Waterloo and has been since its inception. Until this year its head was Very Rev. Father C. L. Siegfried whose twinkling shrewdness helped the University weather many a storm in its formative years. Today the College is represented by the Rev. Father Finn. The other three colleges are affiliates of the University. They are Renison, St. Paul’s and Conrad Grebel. Each college principal as he enters convocation has a personal interest in some of the graduates because they have stayed in the halls of residence which are part of each of the four colleges. They are a unique quartet, representing four faiths—Roman Catholic, Anglican, United Church and Mennonite—in one sense they have hitched their wagons to the rising star of the University of Waterloo but in another way they are apart from it. Simultaneously, they can be concerned but not necessarily involved in the

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*Graduate work in mathematics was begun so quickly that masters’ degrees were earned before the first undergraduates had completed their courses.
never-ending problems which beset any university. More than once, their objective wisdom and counsel has served the University well. They are followed by the convocation chaplain and the registrar of the University.

The University of Waterloo has four faculties each headed by a dean. At today's convocation two of these deans are making their final appearances in this role. Dr. Douglas Wright will soon retire from his post in engineering to be followed in a few months by Dr. R. G. Stanton, Dean of Graduate Studies and an original at the University of Waterloo and, before another year is out, still another dean—Dr. Norman High of arts—will also be giving up his post. And Dean McBryde of science is, as usual, thinking his own deep thoughts regarding his present tenure.

There is no regulation at the University of Waterloo stipulating any period of tenure for a dean, but the University seems to be evolving a programme for a rotating system. It may be sound academic policy or it may merely be the result of the wear and tear of extremely difficult and busy formative years, but the deans today certainly do not look fatigued. Each one of them in his own way has much in which he can take pride, and the gratification which comes from knowing that work has been done well cuts through the heavy habiliments of academia to reveal the able and competent man underneath. Wright is fidgeting; you can almost hear him saying, "Let's get on with it, let's get on with it." Stanton, as always, is keeping a watchful eye out for the small but sometimes significant things that usually escape normal observation. High is beaming with goodwill because this is an occasion for it and McBryde, like all Scotsmen on ceremonial occasions, has cast his face in that resolute mould which says, "This is a serious occasion; I hope you realize how serious it is." Behind them comes the academic vice-president of the University, T. L. "Ted" Batke looking as if he had just enjoyed a good lunch, which he had, paid for by the University as is the custom on this occasion when the chancellor entertains a select group including senior officers of the University and those who are to be recipients of honorary degrees.
Behind Batke come these distinguished citizens. From its first convocation in 1960, the University has been frugal about conferring honorary degrees. Unlike some other institutions of higher learning in Canada the majority of its honorary graduands have been academics and the others men who have been intimately associated with and made a significant contribution to the cause of higher education and the advancement of learning.

After them is the Chairman of the Board of Governors, Ira G. Needles, a man of folksy urbanity who for ten years has devoted the major part of his time to the creating of a great university. He is certainly one of the few, and perhaps the only, chairman of a board of governors with an office at the University where he works almost every day. Little has happened at the University of Waterloo that Needles has not known about. Incisive executive that he is, he early defined the duties which are associated with the post he has held since the University began and it is his policy to stick to those duties. When asked he will provide counsel out of his vast and successful experience in business and his shrewd capacity to assess and understand human nature but in the day-to-day operations of the University his motto has always been "Let Gerry do it."

Gerry is behind him. Dr. J. G. Hagey, Vice-Chancellor and President of the University of Waterloo. It is not true that the sky blue and silver gown designed for the first and only president of the University was created to complement his pure white hair. As a matter of fact, as the first convocation came near it was suddenly realized that the University had no presidential robe and with its usual efficiency the job was turned over to a professional costumier who specialized and was knowledgeable about these things. Physically, Hagey is not a large man but he has the tenacity of a bulldog and the agility of a terrier. The rock over which all storms associated with the formation of a new university break, Hagey has grown with the University. Somewhere in the deep recesses of his mind lurks the phrase "my campus" not in the proprietary sense but rather in the sense that he sees the University now as an extension of himself. Through more than one moment of personal
doubt and personal tragedy the President has had to stay firm because there was still so much to do at the University. He has not always been right and has repeatedly been told so but as he walks into the stadium he knows that behind him is much more than a dream come true. Behind him, after only ten years, is the largest integrated campus in Ontario, the third largest university, and an exciting intellectual atmosphere which is perhaps best summed up in the words of an Ontario statesman who has called Waterloo “a real swinging university.”

The Chief Justice of Ontario and Chancellor of the University of Waterloo, the Honourable Dana Porter, is last in the procession. For many years a powerful influence in the Ontario political scene as well as a renowned and highly respected jurist, Dana Porter was one of the first “outsiders” to see the great potential in the Waterloo Plan. It was fitting that he should become the University’s first chancellor in 1960. Today is his last full convocation. The next time he officiates it will be to instal his successor who will be Ira Needles and then, from Needles, he will receive the highest honour the University can confer upon him, an honorary LL.D., well and truly earned.

The vigilant marshals of the procession steer the various groups to their proper places. The platform group move to the places carefully marked on the diagram prepared by the registrar. There they stand. The chancellor removes his cap and the strains of “God Save the Queen” fill the air. The convocation chaplain offers the prayer of invocation; the chancellor returns his cap to his head and the audience sits down. The vice-chancellor stands, and says “Mr. Chancellor. . . .” The chancellor tips his hat. “. . . I present to you those scholars who have fulfilled the statutory requirements laid down by the senate of the University that they may be admitted to their various and several degrees.” The chancellor replies “By virtue of the authority vested in me, and in the University, I hereby admit you to your various and several degrees, with all rights and privileges thereto appertaining.”

The vice-chancellor, as is customary, has a few words to say to those students who are on the verge of becoming “part of the
past generation of university students.” His first words set the tone. “It has been said that something only needs to happen twice on our campus for it to become a university tradition. . . .” When he is finished the dean of engineering rises to present the graduating class.

“Akadry, Adesanya. . . .”

The first graduand rises and moves to the platform; kneels before the chancellor; holds his hands together in front of him; they are clasped by the chancellor who says “I admit you to the degree. . . .”
THE FIRST STUDENTS

“We were a strange, strange crew.”

The speaker is a member of the first graduating class in engineering from the University of Waterloo. His five companions, all U of W “originals,” nod their heads in agreement and as one looks at them as they are now it is not easy to equate the tales they have to tell of their university days with these mature, prosperous and confident young men. The phrase “junior executive” comes easily to mind. These are a representative group of first graduates who went into industry. There is a parallel group, the ones who decided to carry on with their academic work, gain further degrees and who are now back teaching at their alma mater. Unless one considers a professor with a beard strange, this group too belie their assessment of themselves. And yet, no matter how one puts it together, the first students who turned up in Waterloo to try out this new thing called co-operative education were indeed different in many ways from a conventional freshman class in any Canadian university of the time.

One of the articles of faith of those who founded the University of Waterloo was that the then very rigidly structured system of higher education in Ontario tended to deny the university experience to a group of competent people. Ten years ago there was little financial assistance for university students; the province had yet to embark on its broad programme of scholarships and bursaries and the economic factor loomed large in the plans of any young man who, whatever his potential might have been or his desire to go to university was, still had to ask himself the vital
question: "Can I afford it?" As a result, there were many still-young people who, with no prospect of university entrance, had quit before Grade 13 to go to work or, having completed Grade 13 then found it financially impossible to go further. These were the people the founders of the University of Waterloo had in mind. They avowed that one of their purposes was to take up the slack and they did it by creating a programme unique in Canada which both helped the student financially and included a curriculum which would permit some of those who had not acquired university entrance to get in and then, if they proved competent, proceed to degree work. Later we shall follow the intricate and complex stages of development which led to the creation of this programme, but the fact that those first students did come and that they were largely from the group which has just been described and, even more important, that they graduated and are now fulfilling important roles in the economic and academic development of this country is the proof that the programme was both timely and sound.

It was not enough, of course, merely to have a programme. It was necessary to cast a wide net and perhaps this is what those first students meant because when one casts his net wide he gets a very variegated assortment of fish. Let's take a look at them: among the early students were those who had been encouraged directly either by the companies they worked for or by their unions to take what then looked to be a once in a lifetime chance to get a university education; there were those whose parents had always wanted them to go to university but they had tried working for a while and, since the term was short, decided to keep peace in the family and go to Waterloo for three months and then go back to work (not many of them did); there was a sailor who financed his first months by drawing his unemployment insurance; there were students directly out of Grade 13 in high school; there were men who had gone to work in factories, decided for themselves this was not for them and eagerly took the chance to give university a try. In short, they came from almost everywhere and while most of them were young, some were in their forties. Many
of that early group recall with warmth the oldest of the lot whom they called "the governor." Generally speaking, they were from the lower income groups. One of the graduates summed it up by saying "By accident they pulled in a lot of good people who otherwise would have been lost."

From the beginning, it was realized that this particular kind of academic venture would not be equated with an operation such as Waterloo College, that is, an institution set up primarily to service a specific and localized community. The people who were likely to be attracted to the first offerings of the Associate Faculties (the name under which the University of Waterloo began) were not peculiar to any district. Therefore, one of the most important first tasks was to spread the word and this was accomplished with skill and vigour. J. G. Hagey, the President, had spent most of his life in advertising and public relations. The Chairman of the Board of Governors, Ira Needles, had been a leader in Canadian industry and active in the affairs of the Canadian Manufacturers' Association for many years. These two realized the importance of letting the people of Ontario know what the new venture had to offer. Needles wrote literally hundreds of letters to Canadian companies and it was largely these letters which brought those first students in from industry. Hagey wrote most of the original descriptive material himself and contacts were made with influential newspapers. The early students recall three newspaper stories which attracted their attention and made them aware of this new thing at Waterloo—a story in the Financial Post, a story in the Star Weekly, and a story in the Globe and Mail.

It was equally important to get the news to the high schools. In the beginning this work was largely carried on by one of the first staff recruits, George Dufault, who came in to Waterloo in January of 1957 and, along with the other early administrators, had to be prepared for a July opening in the same year. Dufault took most of the burden of making visits to high schools throughout the province. There was not much time to organize a programme and it was a random visitation but it brought students from as close to home as Kitchener and as far away as Northern
Ontario. As a result of these three basic activities—contact with industry, contact with the high schools and news stories—a good deal of word of mouth intelligence was created. A large number of the first students who came to Waterloo came merely because they “heard about it from a friend.”

So there they were, this mixed bag. One of the few things they had in common was that they had all been subjected to an aptitude test. Since both the curriculum and the entrance requirements were still in a stage of flux it was important that some kind of standard be created to sift the applications. The aptitude test was largely put together by Dr. W. H. Bexton who taught psychology at Waterloo College. It comprised standard tests utilized for various purposes, selected and assembled by Bexton to provide at least a rough reading of the individual student’s capacities. Some of the students had to come to Waterloo to take the test. That summer, Bexton toured the province and administered the tests in other areas. Reactions of the students vary widely from those who felt it was a good thing because it gave them confidence through an assessment of themselves to the cynical who state “they [the tests] were created as an alibi for those who flunked out.” In any event they did provide the mechanism by which the first selection of students to come to Waterloo was made.

And when they came the students experienced a wide gamut of feelings in which shock and surprise dominated. Physically, at that time, Waterloo College had two buildings—Willison Hall, a traditional college building, and a new more modern classroom and administration building. It looked rather small for a university but when the students came and found that they were not going to do most of their work even in these two rather meagre buildings but instead in first one, then two hastily put together temporary buildings on the parking lot behind Willison Hall, it was inevitable that they would ask themselves “What am I letting myself in for?”

They quickly found out, particularly those who worked through that first hot summer of July, 1957. They had let them-
selves in for what was perhaps the hardest three months of work in their lives. The hastily assembled faculty, committed to a new venture in education, were determined that there would be no let-down in standards and that if the experiment were to work it had to be academically sound from the beginning. Many of the students had been working for years and had lost the habit of study and concentration. No allowances were made. The professors "slapped the work to them." Simultaneously the temperature soared. The huts, as they came to be called, grew hotter and hotter. Somebody got the idea that it might make things a bit more bearable if they hosed down the roof which was a good enough idea until they discovered that the roof leaked. Ultimately it became a question of throwing modesty to the winds. Gradually even the most sedate student—even "the governor"—was working in his underwear.* Ask any of that original group what it was like working through the summer term and the invariable response will be "hot as hell."

But they survived. To a man, the predominant recollection of the original students of their first months at Waterloo is nothing but work, work, work. Many fell by the wayside but those who made it and came back for their next term eventually found themselves evolving into a homogeneous group, developing confidence in themselves, pride in what they were doing and faith in the kind of instruction they were getting.

Although in the beginning the students were on the same campus as the students at Waterloo College they never really integrated. From the start they felt alien. Most of the students of the Associate Faculties had the feeling (rightly or wrongly) that the students of Waterloo College were rich and snotty and immature. But quite apart from the fact that they may not have had as much money or shared the same areas of interest, the major factor undoubtedly was that these students had no time to make friends with anybody. However, as the years went on they came to know each other extremely well and it was almost a matter of correct form to distinguish themselves from the students

*The "governor" wore a union suit!
of the "College." They deliberately wore sloppy clothes; they set up their own newspaper — *The Enginews* — a mimeographed sheet which ultimately became important enough for the College paper — *The Cord* — to recognize it and incorporate it with its own masthead — into the official student paper on the campus. The students of the Associate Faculties had virtually no participation in the College extra-curricular activities. Instead they had to make their own social life and since there were no facilities for them on the campus they moved into the town.

In 1957 the main street of the City of Waterloo was very like that of a large country town. The real metropolitan area was in adjoining Kitchener. The students rarely got into Kitchener but they found their favourite spots on the main street of Waterloo. Inevitably, they gravitated to the local hotels. The first "home" for the original students was the Waterloo Hotel. Indeed, as a joke, some of the students (there was a professional sign painter amongst them) sewed together sheets — taken from the hotel — and painted "home of the engineers" on it. This they hung from the windows of the top floor in front of the hotel and an astute management let it stay there for a week. Basically they were not a particularly hard drinking lot but the beer parlour became their common-room because, as so many of them have recalled, "there was no place else to go."

For eating purposes there was the Grand Grill which stayed open late. Thus the hotels and the local restaurants were the only places for relaxation available to the students. Naturally they sometimes got restive and in retrospect some of the early students feel "we got away with a lot." Usually when students got into difficulties with the police "all we would get was a little talking to." Although he is on record as having said "Waterloo will never become a university town" (whatever was meant by that) Chief Otto of the Waterloo police dealt with minor infractions of the law with a light hand. A typical example is a group of students who, emerging from the Grand Grill late at night, decided they were in desperate need of the bubble gum machine which they promptly took as two policemen sitting in a
cruiser watched them. With the deed done they were taken into
the cruiser to the police station where Chief Otto gave them one
of his usual lectures. They assumed the incident was forgotten.
Three weeks later, they were summoned to the President’s office.
In those days most discipline in the university was handled by
either the President or the Dean of Applied Science. On this
occasion the President was just warming up to a good tough
lecture when he was interrupted on the telephone by a call from
the Bank of Montreal telling him that a loan which the University
desperately needed in the amount of $75,000 had been granted.
The President grinned and told them to get—out!

But there was one common student misdemeanour which did
not affect this particular group. As one of them put it, “When
we went to the hotel we were 21.” Generally speaking, especially
for a group under the stress of an extremely rugged academic
experience, they were not unruly. With none of the conventional
college recreational facilities at their disposal they appear to
have been remarkably well behaved. Of course the ingenuity and
creativity which the university experience seems to generate had
to find its outlet. On one occasion when one of the group got
engaged to be married, his fellow students secured an actual ball
and chain, locked it on him and refused to take it off. The poor
fellow came to class carrying his ball and chain along with him
every day for a week. When construction was started on the new
campus site, in a moment of exuberance some students got hold
of a Euclid earth mover and ran it into the creek. The con-
tractor, an understanding fellow indeed, picked up the tab for
the most of the damage. But the most spectacular feat of all was
one which probably provided the fledgling university with its
broadest and most successful publicity.

In June of 1958 two students, Mike Matthews and Bill
Stephenson, took a hard look at the huge City of Waterloo water
tower which adjoins the campus and is visible from almost any
part of it. It does not require a great deal of psychological insight
to follow the thinking of these two men on their way home from
either the Waterloo or Kent Hotel, in a German community with
a large brewery in it, as they regarded this large container for liquid. With skill and ingenuity which still baffles the best research minds at the University these two procured paint and brushes and rope, got to the top of the tower, and while Matthews at its apex held the rope Stephenson dangled down the side and in large bold letters painted "BEER". Inexperienced as they were in the ways of publicity they wanted a permanent record of their achievement and the next day hired a private plane to take pictures of their handiwork. Had it not been for this bit of vanity it is doubtful if they ever would have got caught. And it was completely unnecessary. As soon as the word got around and the solid burghers of Waterloo saw what had happened to their water tower, press photographers were on the spot and the picture was carried in almost every major newspaper in Canada.

An astonishing number of people heard of the new University of Waterloo for the first time as a result of the picture. No one has ever attempted officially to reward Matthews and Stephenson for the most spectacular publicity the University has ever had but their names will never be forgotten on that campus.

The fact of the matter is it was often a lonely life for those first students. Since they were all engineers there were no girls amongst them. Some of them, amongst the older ones, were married and still others got married before they graduated but the solace of female companionship was sadly missed in the early months. But in this field particularly, man is ingenious. Even though most of the single men had "a girl back home" the well known roving eye of the average college student could not be gainsaid. Here the Twin Cities community showed its intrinsic warmth in that every early student recalls with gratitude how they were welcomed by the local clubs, particularly the major German club of Kitchener—the Concordia. Here they met the local girls. Then they made contacts at the hospitals and made the acquaintance of many a student nurse also away from home. Their relationships were largely with the community rather than on campus and they missed the usual campus experience. When they finally got their Engineering Society organized one of their first acts
was to levy a fee on all students which was earmarked for the construction of a Campus Centre at such time as the amount would become sufficient to build one.

The formation of the Engineering Society was really the first official statement of the students' insistence on their own identity. The first president was Jack Kruuv, the vice-president Bill Lennox and the secretary Al Strong. It had no constitution, only token recognition by the student government of Waterloo College and no formal organization, but in the summer of 1958 they decided to organize their first dance. Bill Lennox was in charge and it was held in the newly acquired Seagram Gymnasium. There was no committee and Lennox kept no books. "I just kept the money for the dance in my left hand pocket," Lennox explained. It was a resounding success; indeed it went to the heads of the young administrators and when the time came around to have the next one they decided to hold it at a well-known nearby location for the more ambitious social events of the community—at Leisure Lodge just at the edge of Preston. The dance was to be the culmination of a glorious weekend. The students invited the girls from home and an elaborate programme was laid out. The only catch was that it cost so much money a lot of the students either could not participate at all or were broke for weeks afterwards. It came to be known as the billionaires' weekend and for many years the name stuck and the annual Engineering Society dance was known as the Billionaires' Ball.

All through this period the students, as they gained confidence in themselves, clamoured for more and more recognition. At the corner where one turns off the main street of Waterloo toward Waterloo College there was a sign indicating the location of the College. After festering for a while the new students decided to do something about it. Once more the sign painter's skills were employed and a great board bearing the words in bold letters "ENGINEERING" was affixed to the sign. The administration got the message and it was not long until the sign
was changed to incorporate both Waterloo College and the Associate Faculties.

In the long hours in the classroom and laboratory there was no boredom. The students thought they had a “great faculty” and they did. We shall encounter their names as the story of the development of the University unfolds and the record of their accomplishments proves the students’ assessment was right. The relationship between student and teacher was unique. Most of the original faculty were as deeply involved in the experimental nature of the venture as the students themselves. Generally they were young and often it was impossible to tell teachers from students. They worked together and often played together too and somehow there developed a deep sense of involvement as the interaction between student and teacher flourished. They came to share a common belief that they had a real stake in making the Waterloo Plan work. As one of the originals summed it up, the professors said “You guys are all an experiment; we’re trying all this on for size” and the students’ reaction was “We’ll use them” and thus they came to struggle together. In the beginning, with inadequate facilities, with courses being changed constantly and, perhaps the most pervasive and upsetting of all, still with no degree granting powers, the group of faculty and students who made up this embryo university coalesced and generated the dynamic out of which a great university was created in a shorter period of time than has ever been recorded in the educational history of Canada.

Of course this group of pioneers have regrets. Like any other pioneering venture many of the amenities of older and more highly developed institutions were lacking. In retrospect the students are a bit wistful about missing many of the broadening features which are implicit in a multifaculty university such as the University of Waterloo now is. They console themselves by saying that they had never known anything else and so they could not miss it. They are happy that the University which was just starting to form when they were there has evolved into the kind of institution they now realize a university ought to be. And
what is more, these first students with their deep sense of identification are determined that the University of Waterloo will meet their highest expectations. As one thoughtful original put it “A university must broaden the full man. When I was there it didn’t but they can do it now and by god it better be done.”

Here then, in these first few hundred students, was the raw material and they continue to think of themselves as a group rather apart and, perhaps, even something special. However, as they take on the full responsibilities of mature citizenship they are coming to realize that every freshman class in any university has implicit in it the same challenge which, simply stated, is to take a reasonably competent human intelligence, discipline it, strengthen it, stimulate it and, above all, prove to it that the harder it works the greater is the fulfilment which the man enjoys.

In this sense, nothing has really changed. The context in which the miracle of a true university education is accomplished has altered drastically in ten years at Waterloo but there is no end and there never will be an end to meeting the challenges which every freshman class brings to the campus.
THE ORIGINAL CONCEPT

The University of Waterloo is often described as the first of the "instant" universities in Canada. While, amongst other things, it has turned out to be something of that nature, its beginning (unlike that of most contemporary new universities) was not an attempt to meet a statistically predictable need in the realm of higher education. On the contrary, its origin and growth is a very human story. The meaning implicit in the Waterloo chronicle is not that good new universities can be created quickly and efficiently as required, but, rather, that creative dynamic and stubborn people can found a great new university if they truly believe in it and what it sets as its educational goals.

Waterloo was conceived in love. When it took form and was born—like man himself—it became a child of conflict. It increased in stature through conflict. In the never-ending struggle to achieve maturity, it continues in conflict and as long as it has meaningful life it will survive in conflict.

This then will be a narrative of battles, many of them slight skirmishes, but all of them a part of the joyous tumult which is healthy man trying to know and understand: the essence from which great universities derive.

To get into our story we have to go back to around 1953. At that time one of the most ubiquitous and best known citizens of the Twin Cities was Joseph Gerald Hagey. Thinking back to those times, he has described himself as a "joiner." As advertising and public relations manager for one of the largest industries in the area—B. F. Goodrich—one might assume that Hagey's identification with a wide spectrum of activity was largely a
byproduct of his job but there was more to it than that. When he took his B.A. degree he seriously considered following a career in the area of social service, such as work with the YMCA but, as has happened to so many young men before and since, he was lured into the more lucrative field of corporate industry. The initial impulse, however, remained intact. Despite much travel and heavy duties with his company, Gerry Hagey was continuously involved in community service organizations, a member of many committees and boards and, in short, what he had at one time considered as a possible career had in fact become his chief "extra-curricular" activity.

Amongst many other things, one of his interests was as a member of the board of governors of his alma mater, Waterloo College. Waterloo College at that time was a small arts college, an outgrowth of Waterloo Lutheran Seminary (established 1914), affiliated in 1925 with the University of Western Ontario. It offered a general arts course, and started some science after World War II, but for many years had been relatively static. In its limited capacity, it served the Kitchener-Waterloo community. It was never exactly hard-pressed for funds* but had never been in a position to consider any major expansion. It had always been closely integrated with the fabric of the Lutheran Church, always had an ordained Lutheran pastor as its president, but, as Canada moved into its era of rapid postwar expansion, the potential for further development of the college became a matter of concern.

The secretary of the Board of Education for the United Lutheran Church in the United States was asked to come to Waterloo to take a look at the college. His visit resulted in certain specific recommendations one of which was that the college should have a layman as president. The qualifications which this man should have were spelled out in some detail: ideally the recommended president for Waterloo College would be an alumnus, have business experience, be active in community affairs and have a good working knowledge of public relations.

*Although on occasion, prior to Hagey’s appointment as president, it temporarily operated at a small deficit.
Very obviously, the man described by the secretary of the Board of Education of the United Lutheran Church was sitting on the board of governors of Waterloo College and his name was J. G. Hagey.

Those who have worked closely with J. G. H. (the public relations "Gerry" has become almost extinct now), are accustomed to having him describe an idea which came to him "in the middle of the night." During the period when he was contemplating whether or not he would accept the presidency of Waterloo College one of these now familiar ideas arrived. He had been wrestling with the problem of how to increase the income of the college because if it were to expand more dollars would be required. He conceived an idea which at the time he thought was practicable and which involved a principle which he did not know existed in the realm of higher education. His basic idea was that the college would get the students to take over most of the operating jobs involved in running the institutions on the basis that it would add another and practical dimension to their university training and, at the same time provide them with some income. In a different form the same principle is utilized in the concept of co-operative education—a concept which was eventually accepted by Waterloo and gave it a unique position in its formative years. Actually Hagey's scheme never got off the ground because the students wouldn't buy it, but that night he believed it was feasible and on the strength of having what he thought was an original plan to start his regime as president he accepted the offer.

Once president, the need for additional funds to provide for expansion became Hagey's major preoccupation. The main source for money for higher education in the Province of Ontario is the provincial government, but by this time, under the premiership of Leslie M. Frost, the Ontario government had made it clear that it would not contribute to denominational colleges and universities. The government's position was that to do so would see the growth of a widespread system of small unit universities and colleges which the government deemed inefficient and, also,
that if help were given to one denomination there would inevitably be matching or greater demands from rival denominations.

Meanwhile, the other institution of higher learning in the Twin Cities—St. Jerome’s College—which was affiliated with the University of Ottawa in much the same relationship as Waterloo College had with the University of Western Ontario, had outdistanced the Lutheran college. In 1953 St. Jerome’s opened two handsome new buildings on its new campus at the eastern end of Kitchener. One of Hagey’s first official acts as president of Waterloo College was to attend the opening of the new St. Jerome’s campus and on that occasion he remembers one of his friends remarking to him “too bad you got in too late.”

Never one to back down from a challenge, Hagey began to familiarize himself with the university structure and all its implications in the Province of Ontario. Eventually he became aware of the fact that one of the largest denominational universities in the province, McMaster, had taken steps as early as 1947 to make itself eligible for some provincial support, by setting up Hamilton College as a separate, non-denominational college to teach science at McMaster. In 1954 the then Assumption University in Windsor followed a similar route and a little later the Roman Catholic University of Ottawa established a school of medicine which gave it access to provincial funds. By this time Hagey was convinced that the only way Waterloo College could expand would be with the help of government money.

When he was considering leaving B. F. Goodrich to take up an academic career Hagey naturally consulted his employer, president of the company, Ira G. Needles. Their relationship had always been close. Needles, himself philanthropically minded, understood very well the attractions which an opportunity to serve in the field of education and the church would have for his advertising manager. Now, three years later, it was very natural that one of the first people with whom Hagey would discuss ways and means of gaining provincial financial support would be Ira Needles. They agreed that it was in the best interests of the Twin Cities area that opportunities be provided for higher
education beyond the general arts degree. Hagey and Needles were convinced that other industrial leaders in the area would feel the same way and decided to call a small preliminary meeting to test the idea further. In the fall of 1955 at a luncheon at the Granite Club a few men were brought together including Dr. S. F. Leavine, C. M. Dare, E. J. Shoemaker, Needles and Hagey.

At this meeting there was general agreement that the idea was a good one and that a much larger group of interested citizens should be approached individually to get their reactions. It was further contemplated that those who were favourable would in all probability become the nucleus for the board of governors of the contemplated non-sectarian college to be affiliated with Waterloo College.

Meanwhile, of course, Hagey had been exploring the idea with his own board of governors at Waterloo College and with various members of the faculty. Generally speaking, the idea was favourably accepted always with the built-in proviso that it receive the approval of the Canada Synod of the Evangelical Lutheran Church. Here the mood was cautious but the need for more money was recognized and the handsome new campus of St. Jerome's to the east was an ever-present reminder that they might break their Ottawa affiliation and make the projected move to gain provincial funds first.

By December, 1955, there was general agreement that an attempt should be made to set up a non-denominational Faculty of Science which would be affiliated with Waterloo College. Accordingly, on December 16th, a meeting was called in the boardroom of Waterloo College to which two area publishers—John E. Motz of the Kitchener-Waterloo Record and Hugh Templin, president of the Fergus News Record—were invited; two local doctors, Dr. Harry Lackner and Dr. S. F. Leavine; and the following area businessmen: Gordon Chaplin, Carl M. Dare, Karl Gruetzner, Lewis Hahn, P. R. Hilborn, A. W. Hopton, A. R. Kaufman, Henry C. Krug, Ira G. Needles, Carl A. Pollock, E. J. Shoemaker, J. K. Sims, A. Mel Snider, J. G.
Brown, W. F. Franke, Harry L. Guy, Bruce Marr, and J. W. Scott. The last five named were unable to attend the original meeting.

After considerable discussion the following motion was made by C. A. Pollock and A. M. Snider:

"Those present agree that they will serve as charter members of a board of governors for a faculty of science to be affiliated with Waterloo College and that they will record their agreement by affixing their signatures to the motion."

The motion was unanimously approved.

The group immediately got down to business. They set up a committee "to appoint and work with legal counsel for the purpose of incorporating under The Companies Act a board of governors for a faculty of science to be affiliated with Waterloo College."

This committee was further charged with the task of preparing "an agreement of affiliation of the newly incorporated faculty with Waterloo College." It was further moved that the group ask Waterloo College to underwrite expenses incurred for the purpose of organizing a board of governors and the faculty of science.

Whatever the private dreams of some of the members of this group might have been, what had actually been created was a device whereby provincial money could be made available to Waterloo College and regardless of how far the imaginations of some of the members may have taken them, certainly there was not one man present at the first meeting who had any idea that he had just participated in the first move which, in a little more than a decade, would result in the existence of a major and one of the most dynamic universities in Canada.

At the historic first meeting Ira G. Needles had been elected chairman, and Carl M. Dare, secretary. These two along with J. K. Sims, C. A. Pollock and Dr. Harry Lackner constituted the Legal Committee which was to make application for incorporation. J. H. Smyth was appointed legal counsel. This group first met January 26, 1956. By this time Mr. Smyth had prepared an application for incorporation which was approved, and in April
4, 1956, Waterloo College Associate Faculties became a legal entity with a board of governors* who now had to ask themselves what they were going to do about it or as J. G. Hagey expressed it, "After we had it [Waterloo College Associate Faculties] we had to figure out what it was going to do." It was all very well to set up a mechanism through which approaches could be made to the provincial government for financial support but that mechanism had to have acceptable educational significance. To make this determination many factors peculiar to the Waterloo situation had to be taken into account.

In the first place there was Waterloo College itself. It had to accept the newly created body and allow it to become affiliated. In so doing, it was going to have to protect what in its judgment were its own best interests. Certainly, at this point, there was no thought on the part of the College that the educational function it then carried would in any way be transferred to the new body. Whatever the Associate Faculties did decide to do would obviously be required neither to conflict with the role of Waterloo College nor to impose any undue strain upon its resources, its relationships with the church which sponsored it, or the University of Western Ontario with which it, in turn, was affiliated. Thus, at the outset, the interests of both the Evangelical Lutheran Synod and the University of Western Ontario had to be taken into account. In addition there was always St. Jerome's, an unknown factor which at this point could be either friend or foe. And finally, there was the overall responsibility to the community in which the new organization had been created and even here the picture became blurred because plans were already well under way for the establishment of an Ontario government-operated Institute of Trades in the city of Preston.

Obviously the first move was to become officially affiliated with Waterloo College and on April 25, the board of governors of the

Associate Faculties approved a petition which was to be presented for approval by the board of governors of the College. By June 19, Hagey was able to report back to the board that the Evangelical Lutheran Synod of Canada, sponsors of Waterloo College, had given its approval of the petition and agreement for affiliation. Hagey pointed out “that while considerable discussion had taken place and that many varying views had been expressed, the approval was given by a substantial majority vote in favour.” At this time the full implications of “considerable discussion” and “many varying views” were not apparent to the Associate Faculties governors. Later it would be realized that from the beginning there existed within the Lutheran Synod a hard core of scepticism—and in some cases suspicion—of the entire project.

Another area of some doubt had also been opened up at the April 25th meeting of the board when it agreed that a resolution be presented to St. Jerome’s. In this resolution it was pointed out that the board’s petition for affiliation with Waterloo College implied a probability of the Associate Faculties procuring a degree-granting charter some time in the future. With this possibility before them, the Associate Faculties board went on record that it would “entertain a petition from St. Jerome’s for an association that makes the facilities of this board available to St. Jerome’s on a favourable basis.” Here was a tentative and somewhat nebulous step toward creating a relationship which, ultimately, might bring together all the institutions of higher learning in the Twin Cities. St. Jerome’s, and especially its rector, Reverend C. L. Siegfried, were interested all right, but by no means certain that an amiable relationship could be developed with an institution which was so closely related to, if not dominated by, another church. In retrospect both Hagey and Siegfried recall with considerable delight the cagey manoeuvring which went on between them in the early stages of what eventually developed into a most cordial relationship which brought about an arrangement mutually beneficial to both parties.

But while the structuring of the new Associate Faculties and the untangling of its relationships with both Waterloo College and
St. Jerome's College were proceeding, the major question, "What will the Associate Faculties teach?" dominated all other considerations. It was fairly evident the answer was to be found somewhere in the area of science or applied science. During this period Canada's booming economy had brought sharply into focus a national shortage of both engineers and trained technicians. The launching of Russia's Sputnik had dramatized the need for accelerated scientific activity in the western world. And right at home, the board of the Associate Faculties, predominantly made up of area industrialists, was thoroughly familiar with the need. On the other hand, however, the existing universities in Ontario were responding to the challenge. McMaster had invested heavily in scientific research and was developing a full-fledged programme. The Universities of Western Ontario, Windsor, and Carleton had started new engineering schools. What was left for Waterloo?

The question was first tackled by examining what was going on at Waterloo College. Although predominantly devoted to the humanities and social sciences, the college had developed a first year in honours science. Those who completed it successfully then moved on to Western. At this time, the entire resources for teaching science at Waterloo College consisted of two faculty members—Bruce W. Kelley, Chemistry, and H. K. Ellenton in Physics—and a single laboratory which when it was inventoried later was worth approximately $19,000.

Bruce Kelley, a devoted scientist, who later became the first dean of science at Waterloo, was the instigator of discussions which ultimately led to the formulation of the first curriculum for the Associate Faculties. Kelley was deeply concerned by the high failure rate in the first and second years of science courses. He felt that the transition from high school science to university honours science was often too difficult for the average student. He had also come to the conclusion from his own teaching experience that often a high school student who showed a preference for vocational work was encouraged to take science at
the university level and that such an aptitude did not necessarily indicate a capacity for advanced work.

These ideas provided the basis for many discussions which were carried out by Hagey, Kelley and Dean Lloyd Schaus who was not only the dean of arts at Waterloo College but had also been appointed dean for the Associate faculties.

The solution was achieved by what superficially appears to have been nothing more than a fortuitous combination of circumstances. However, the fact that these same basic ingredients came together time and time again as the University of Waterloo developed, and the fact that J. G. Hagey, as president, had been the one person always involved, seems to argue that, wittingly or not, Hagey developed a formula for building a university and made it work.

The ingredients of what might be called the University of Waterloo formula are worth examining. First, a new (but not necessarily untried) and fresh approach to a basic academic problem must be discovered, analyzed and developed. Secondly, people with knowledge and enthusiasm for the new approach and the capacity to develop it must become involved at the earliest stages. Thirdly, there must be a proven need in the field of higher education for the programme which is to be offered. A competent faculty must be found who are ready to commit themselves to a new approach even though there is the possibility that it might jeopardize their security or reputation in the conventional academic world and finally the board of governors must be made up of men who are willing to take calculated financial risks.

All these factors were brought into play as the Associate Faculties fumbled their way toward what ultimately became the programme which attracted the first students in 1957.

The new twist to a conventional educational programme was found in an old but comparatively little-used educational device which in North America is called co-operative education. There are not many North American universities which use the co-operative plan and Waterloo until recently was the only Canadian
university to utilize it. Basically the plan is nothing more than splitting the college year into three or four units—at Waterloo it was originally four but presently is three. The students alternate between an academic term, i.e. four months on campus where they receive the usual instruction appropriate to their course and a work term (also four months) where the students go out into the world of industry and commerce and work at jobs which the university arranges for them. At Waterloo these jobs are related to the courses which are offered on the co-operative plan. For example, an electrical engineer would be placed in a work situation where what he learned at university could be utilized in practice “on the job.” This is not always the case at other co-operative universities in North America but it has always applied at Waterloo. The details of how this works out and what its implications are will be discussed in a later chapter; it is sufficient to record at this point that the idea attracted Hagey, Kelley and Schaus. For Hagey it was, somewhat to his surprise, akin to the thought that he had got in the middle of the night before he ever took the presidency of Waterloo College. It did something for students. For Kelley, it was a testing ground where students might find out whether they should concentrate on vocational technology or advanced studies and it also provided them with increased motivation. The University of Detroit was the institution closest at hand where co-operative education was in practice and Hagey and Schaus went down to check it out at first hand. They returned enthusiastic and Hagey began building interest in the board of governors.

At this point, P. R. Hilborn, a charter member of the board who was also involved in the trade school project for Preston, introduced Hagey to Leslie Emery. At this time Emery was the principal of the Ontario Institute of Trades in Toronto but, of much more immediate interest, he was conversant with co-operative programmes both in the United States and England. He was enthusiastic about this approach.

Now the second ingredient of the formula was in existence—men familiar with the new approach which was to be considered. By June, 1956, J. G. Hagey was ready to present “A Development
Plan for Waterloo College Associate Faculties.” On the 19th day of that month he presented his report.

The first point made in the president’s proposal was a cautious commitment on paper that the development of the Associate Faculties might have implicit in it the possibility of “the beginning of a new university.” Two pages later, apparently throwing caution to the winds, the president was saying “Waterloo, in organizing a new university, is challenged to develop courses in line with our country’s present and future needs.”

Previous to this a good deal of time had been spent referring to what were the apparent present needs of the nation, coming to the conclusion that there was “a need for a university college to formulate a curriculum that combines science, technology and the humanities . . . to prepare students for a high standard of technical work; at the same time to qualify them to advance toward a university degree, if they have the ability and the desire to do so.” This generality emerged much more explicitly in the proposed curriculum which had been prepared by C. L. Emery and was included in the report.

This curriculum envisaged a six-year programme starting for students who had completed their Grade 12 requirements. Included in the first two years were all the subjects required for standard Grade 13 standing; several technical subjects such as technical drawing, electricity, electronics, etc.; also included were three first-year university level subjects—mathematics, economics and semantics.* The concept was that by the time a student, enrolled in the Waterloo programme, had completed his first two years he would have achieved his Grade 13 standing, received basic instruction in technological subjects and had exposure to courses at the university level. The purpose of this rather mixed bag of subjects was, theoretically, to enable the student to decide on entering his third year whether he would round out his education in some field of technology or pursue his studies at the university level in engineering.

*The author has been unable to discover what this course was supposed to cover!
It is recorded that the board of governors received the report with enthusiasm. There is no mention of discussion about the co-operative feature but it was undoubtedly considered inasmuch as at the next board meeting on August 22 Hagey outlined the progress which had been made in developing "the co-operative plan of education for technicians and engineers." Most of this work had been done in conjunction with C. L. Emery and the board, feeling that he had a significant role to play, suggested that Emery be placed on the payroll as of September 1. At the November 9th meeting Emery was appointed principal of the new department of applied science.

At this meeting Emery also produced a report which indicated a broader scope for the co-operative applied science course. The report pointed out that students enrolled in the first two years from Grade 12 could not only enter the technicians' certificate course or a university course in engineering but that they would also be qualified for entrance in honours arts or pure science or in general arts.* Provision was also made for students who would enter from Grade 13. In this case, they would still be required to cover the pre-engineering technical subjects (but not the Grade 13 subjects) and would add more first-year university subjects with the result that the time required to achieve a degree in engineering would be reduced by one year.

The barebones plan which the board received enthusiastically in June needed a lot of elaboration especially in the area of the co-operative feature. As it was further explored other kinks developed which had to be ironed out. It became clear, for example, that a full-fledged survey of well established co-operative universities in the United States was desirable before making a final commitment to the co-operative programme. This, in turn, required money which the Associate Faculties did not have. Now, for the first time, the reaction of the provincial government was to be tested and it was a crucial moment. The Associate Faculties had been set up on the assumption that it could produce a curriculum which would

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*In making this point, Emery was obviously attempting to keep the Associate Faculties related to Waterloo College.
enable it to gain provincial financial support. That curriculum had now been developed in its basic form. Would the provincial government support further investigation? It was a time to move cautiously and skillfully. Through his contacts with the then Deputy Minister of the Department of Education, Dr. J. G. Althouse, C. L. Emery was able informally to test for reactions. Althouse’s response was favourable and he undertook to present it to Dr. W. J. Dunlop, then Minister of Education for Ontario. With this groundwork done, by September the board decided to utilize the skill of one of its members—Dr. S. F. Leavine, a former member of the provincial parliament. Ultimately, the Department of Education, first verbally and then formally, granted the Associate Faculties $25,000 for a survey which was to commence the end of November and finish by the end of March to investigate the feasibility and desirability of introducing the co-operative programme at Waterloo. It took the precaution, however, of seconding a member of the Department—A. M. Moon—to the investigating committee. Moon later became a member of the co-ordination department of the university.

The plan, with or without the co-operative feature, by this time had become a concern of the University of Western Ontario. Any colleges affiliated with Western for degree-granting purposes had always been and were arts colleges. The possibility of one of its affiliated colleges offering courses in applied science was a new idea for Western and met with considerable misgivings which were expressed by its president, Dr. G. E. Hall. Among other factors, Western at this time had a fledgling engineering school which was far from being established in the full sense of the word. There was also the question of precedent: if one affiliated college decided to branch out, what might the others seek to do? Obviously careful negotiation was required and this was taken on by J. G. Hagey and Dean Schaus. The negotiations were delicate but before the year was out, after checking the proposed course outline for the first three years with the head of the engineering faculty at Western, that university agreed to receive students for transfer if such were desired.
Meanwhile, closer to home, there was still St. Jerome’s. Both sides had settled into a wait-and-see position. From his first meetings to discuss the possibility of future federation early in 1956 with J. G. Hagey, Father Siegfried had seen the benefits of being associated with a local university development. On the other hand he was also interested in the fact that at about this time St. Michael’s College in Toronto, although affiliated with the University of Toronto, had successfully applied for its own charter. In a word, if the development in the Twin Cities looked promising enough, St. Jerome’s would keep the door open. On the other hand, Hagey, once he had committed himself to the concept that the Associate Faculties would inevitably lead to a full-fledged university sometime in the future, now saw this potential university as comprising several federated or affiliated church colleges and especially the existing one—St. Jerome’s. During the summer matters had reached the point where it was feasible to set up a federation committee comprising representatives of the Associate Faculties, Waterloo College and St. Jerome’s College.

By the fall of 1956 the board of governors and the president of the Associate Faculties were beginning to realize that starting a new university (by this time they had almost unconsciously accepted that this was what they were about) was a lot more complicated than they had realized. It was about this time that the president began using the phrase which he still uses frequently—“doing the impossible.” The impossible included not just straightening out the relationships with other involved colleges and universities but the whole spectrum which comprises university development and administration. First, they had to get faculty and students; they had to become prophets and look into the future and make some kind of guess as to how large they might become because this would determine how much land they would require; they had to learn the intricacies of dealing with government and the language of making applications for funds from the provincial treasury; they had to work out the immediate problems of financing involving dealings with Waterloo College and establishing terms of reference for banking procedures including, of
course, loans! They had to think about teaching facilities including additions to the library, laboratory equipment and space; they had to establish business procedures but, above all else, there still loomed the question of what courses the Associate Faculties would offer.

We have already seen how students were recruited and who came; as our story unfolds we shall see how the other problems were met and how only a few people carried the major burden. We shall also see how fortunate the university in the making was in the people who came at the beginning.

But while all these aspects were being worked on, the curriculum still overshadowed everything. Until they knew what they were going to teach they had nothing to offer to students, no idea of what faculty was required, nothing to ask the provincial Department of Education to support and no guidelines to help them forecast the future.

By the fall of 1956 and with $25,000 from the province to finance exploration, the work of developing the curriculum focused upon the co-operative scheme which was to be applied in the beginning to technology and engineering under the general label “applied science.” Visits to United States colleges which offered co-operative courses—Antioch, Northwestern, Illinois Institute of Technology, University of Cincinnati, University of Detroit—had generated tremendous enthusiasm for what now began to be called “the Waterloo Plan.” Carried away in a rare moment of exuberance, the president saw his students enrolled, graduated and carrying on postgraduate work where, he said, “They see the romance, fascination, and value of research in productive action.”

Of course Waterloo had not reached this point but the enthusiasm was infectious and it gave the innocents from Waterloo the courage to broach the bulwarks of such august bodies as the Canadian Engineering Institute, the National Conference of Canadian Universities and the education committee of the Canadian Manufacturers’ Association. They sponsored a luncheon and met with thirty-five industrialists in Toronto. They
wrote one hundred major Canadian companies seeking their reactions to co-operative education. The study of the report of the St. Andrews Engineering Manpower Conference gave them further ammunition. Altogether they felt they had finally found the first ingredient of the Waterloo formula—a fresh approach to a basic academic problem.

There was, of course, a fly in the ointment. As has been seen, the plan as formulated by C. L. Emery and strongly supported by Hagey and Kelley included opting out at the end of the first two years in favour of a technological final year. The reaction of the professional and academic communities to mixing degree-granting programmes with non-degree programmes was almost 100% unfavourable. There is a mystique about the purity of the university experience which can be substantiated throughout the recorded history of formalized higher education in the western world. It was not to be effectively challenged, let alone destroyed, by a small group of enthusiasts from Waterloo or anywhere else. Almost unanimously it was this feature of the curriculum which was singled out for objection. The Engineering Institute did not approve; the Canadian universities generally and the University of Western Ontario particularly (inasmuch as it still was identified with Waterloo) opposed the concept; and right on home territory, at Waterloo College, the reaction of both faculty and the College's board of governors was unfavourable. It was summed up in a letter of March 12, 1957, from the board of governors of Waterloo College to the board of governors of the Associate Faculties:

Our board is deeply concerned about the possibility of this optional year of technology being detrimental to the prestige of a college that has not yet gained degree-granting status. Regardless of its value to those students who might select it, we suggest that at this time the addition of a specialized technical course on the campus has too great an element of risk for jeopardizing development toward full university status.

Regardless of the validity of the academic objections, certainly the practical objections which are outlined in the College board's rejection of the technological proposal proved to be sound. They
were right in realizing that the inclusion of a technological course would be confusing. As it turned out, even though the technological option was never offered, the word had got around sufficiently for the University of Waterloo in its early years to suffer from a good deal of public misconception as to its nature. All through these years, a good number of people (including those who ought to have been better informed), thought that Waterloo was some kind of glorified trade school. It was difficult enough to convince Canadian academic purists that the co-operative feature was scholastically sound without the impediment of the association which the technological proposal had created.

The upshot was that by the time the Associate Faculties were considering their first course offerings the technological option had been eliminated from the Waterloo Plan.

Now all efforts were concentrated on expounding and explaining the nature and virtues of co-operative education. Here the going was easier. Competent men, with sound academic backgrounds were intrigued by its possibilities. So was the provincial government and, in some measure, Canadian industry. At least it was possible to get a start and one year after the incorporation of the Associate Faculties, Hagey was able to present a report which showed astonishing progress. A résumé of what had been accomplished up to May 27, 1957, is worth recording:

The course outline for co-operative applied science had been prepared for the first three years, checked with the engineering faculty at Western and given approval. The administration of the course would be under the direction of the dean of Waterloo College, the principal of the applied science course, and the heads of each department. Faculty appointments were ready for recommendation and negotiation. Applications with cash deposits had been received from more than one hundred and fifty students out of some three hundred students who had written the admission tests. It was felt that sufficient calls had been made on manufacturing companies to guarantee the placement of students for their co-operative training periods. Waterloo College had added an extra chemistry laboratory and a science storeroom on the third
floor of the arts building to provide space for the new students. Recommendations were made for two temporary buildings until a science building could be erected. A budget of $125,000 for equipment had been approved and most of the equipment ordered. Ten thousand brochures describing the co-operative applied science course had been printed and were in the process of being distributed.

On the practical side, the president was able to report that "personal and written petitions to the provincial government have procured grants totalling $625,000." In addition, Joseph E. Seagram and Sons Limited had undertaken to contribute $250,000 for a football stadium and gymnasium and the City of Waterloo agreed to provide a football field with lights and ready for use, valued at something more than $100,000. A fund-raising campaign was being contemplated.

Altogether the president felt that "this institution has received more national publicity than many of our large universities. The development of our co-operative course is probably being followed with interest by more people than any other course in Canada." As a result it was proposed that approximately one hundred students would be admitted in July, 1957. (Approximately seventy-five actually came.) Thus, in a single year the newly incorporated Associate Faculties, not without many a false start and time-consuming digression, found its purpose, its objective, the support for its plans and were prepared to get under way.

In summing up the president said, "It appears that what seemed to be the impossible is progressing according to plan and schedule" although he could not help adding somewhat wryly, "Frankly, the job has been running your administrators, rather than vice versa."

By the end of the year, the programme was actually in operation. Students had been enrolled in July. Faculty had been appointed and was still being increased. The second annex or "hut" was completed. The co-operative programme, still a little shaky, was being put into effect.

In very truth, the University of Waterloo (even though it did not have name or charter) had begun.
With "what seemed the impossible" achieved as 1957 ended, 1958 began as a year of a different kind of tremendous excitement. In 1957 the small band of pioneers had proved that not only could a new faculty at the university level be launched and attract sufficient students and teachers to get under way, but they had given it a twist which made it unique in Canada.

Actually the tangible response to the co-operative scheme, while encouraging, was not nearly so impressive as the enthusiasm it generated in its backers. They believed in it. They believed in it so much that for them it became the channel through which the somewhat vague hope for a university would be guaranteed. For the first time, this particular group of educators were tasting the most intoxicating essence of the university experience—almost unlimited enthusiasm for a concept. At the time, and perhaps even yet, most of those who were involved in the formative years did not comprehend the subtlety but only the intensity of the experience they were going through.

They thought they were being realistic and practical and up to a point they were but the load which they expected the co-operative concept to carry had little historical basis in fact. None of the United States universities which used the co-operative programme had grown with spectacular speed nor had any of them become really great universities. As a matter of fact, some of them were extremely mediocre. But this was dismissed with a shrug of the shoulder. Co-operative education would carry Waterloo to university status, would attract millions of dollars needed for
development and by 1965 it would have attracted a total enrolment in all faculties of over 3700 students. Actually the campus which was in existence by 1965 and the number of students enrolled exceeded the optimism of 1958 but a large number of factors had contributed to this which were not envisaged at that time.

And yet a great deal was accomplished in 1958: certainly enough to justify optimism.

On January 25, 1958, the University announced that it had bought some 200 acres two blocks west of the site of Waterloo College where a $15 million university would be developed. This was not where they had originally intended to place the prospective university. The details of that story will be recounted later. Suffice it to say that at this point, after considerable discussion, negotiation and changing of plans, the site where the present university now stands was acquired.

By April, 1958, they were getting ready to raise money and a preliminary step was to issue a series of “Personal Reports.” In the second issue they defined the “Waterloo’s Plan.” “Through establishment of its science and engineering faculties,* through purchase of land, and through preparation of a master plan for development, Waterloo College Associate Faculties has taken first steps toward full university status.” They said that they were preparing for the future “with the needs of a widening community, and with changing patterns in our society and economy, clearly (sic) in mind.” They were not modest about their enthusiasm—“It is difficult to describe the vigour and zeal with which faculty, students and friends of Waterloo College and Associate Faculties prepare for the task ahead,” they wrote.

By this time there was some concrete evidence to back this up. May was an important month in 1958. On the same day—May 7th—two important events were held. The first was the formal opening of Seagram Stadium and Gymnasium. Like everything

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*This was straining the truth a bit. At the time there was only one faculty—Science and Engineering under Dean Kelley.
else which happened at this time the complications which were involved in reaching this point make a story in themselves but in May the important thing was it had been achieved and the Associate Faculties had received their first tangible support from both industry and the municipality of Waterloo.

On the same day an “Industrial Conference” was held at Waterloo. Some 200 Ontario and Quebec industrial leaders, educators, scientists, engineers, banking and business executives and public officials came to discuss the co-operative system. A panel discussion chaired by Joseph McCulley, then Warden of Hart House, and comprised of Gordon Henderson, Sun Oil Company; Dr. T. L. Batke, Chairman of Chemical Engineering; Dr. R. G. Stanton, Chairman of Mathematics; and A. S. Barber, Director of the Co-ordination Department, evoked a host of questions from the floor. When he was officiating at the opening of the Stadium, Samuel Bronfman of Distillers Corporation-Seagrams Limited endorsed the co-operative educational programme when he said “the path between the campus and the plant should be open and unhindered.” At a formal luncheon of the conference that day, the father of radar, Sir Robert Watson-Watt called the Waterloo Associate Faculties “an almost unique educational institution.”

All this was only more fuel for the fire which was already brightly burning. Two blocks down the street the Chemistry Building was under construction. A professional fund-raising firm had done a survey and concluded that Waterloo College and the Associate Faculties should be able to raise $1,500,000 if the campaign were launched that year. There was little hesitation in taking on the commitment. They were off and running.

And it is significant that they called the fund-raising drive “Waterloo Co-Operation Education Fund.” They were still convinced that the co-operative feature would answer all problems.

As the year drew to its close, the first building on the new site, the Chemistry and Chemical Engineering Building, was opened on December 3 by the Premier of Ontario at that time—The Honourable Leslie M. Frost. The Waterloo reaction was typical. “Waterloo College and Associate Faculties has taken a big step toward its
goal of becoming the University of Waterloo." The Premier of the Province obviously concurred: he not only spoke of the possibility of "a fully fledged university with faculties and professional and graduate schools... here in the not too distant future" but at one point even used the phrase "this new university." Of course Premier Frost knew that his government had received a petition seeking status as a degree-granting institution under the name of The University of Waterloo. His words merely confirmed that the petition would be granted and indeed it was.

In fact, by March, 1959, three bills (sponsored by the M.L.A. for Waterloo North, John J. Wintermeyer) had been passed in the legislature and were ready for Royal Assent. These three private bills were the result of a good deal of delicate, long term negotiation between the Associate Faculties, Waterloo College and St. Jerome’s College. They were devised both to safeguard the two arts colleges—Waterloo and St. Jerome’s—and also to establish a University of Waterloo. Accordingly, Bill P.R. 4, 1959, established The University of St. Jerome’s College, following the usual procedure of setting up its administrative and governing body and, most important, granting it the power to confer university degrees. Also included was a clause stipulating that "the power and authority of the university to confer degrees shall be suspended and in abeyance, except as related to degrees in theology, so long as the university remains affiliated or federated with any other university." Bill No. P.R. 14, 1959, established Waterloo Lutheran University and covered off, in its own way, the same areas as the St. Jerome’s Bill including the power to confer degrees and the power to suspend the granting of such degrees as long as it was affiliated or federated with another university. In this way, both St. Jerome’s and Waterloo College acquired degree-granting powers but the inclusion of the right to suspend these powers was the indication that the intent was that they should become federated with the University of Waterloo which was set up in Bill P.R. 13, 1959. Once again, the powers, the administration and the governing of the University were spelled out in detail but appended
to the Bill were two schedules representing agreements made on January 12, 1959, between Waterloo College Associate Faculties and (in Schedule A) the Evangelical Lutheran Seminary of Canada, operating Waterloo College of Arts; and (in Schedule B) another agreement between Waterloo College Associate Faculties and St. Jerome’s College.

While the two agreements cover a good deal of the same ground, there were significant differences between that with the Evangelical Lutheran Seminary and St. Jerome’s. It was these differences and the way in which they were interpreted by the board of governors of the University of Waterloo and the members of the Evangelical Lutheran Seminary of Canada which led ultimately to the breakdown of the concept because, indeed, the University as it was envisaged at the time of the passing of these bills never did become a reality.

Although a multitude of peripheral disputes developed, the central issue revolved around an interpretation of sections 1(c) and 1(p) of Schedule A appended to the University of Waterloo Act. Section 1(c) reads:

The College [i.e. Waterloo College] shall have the right to appoint the chairmen for all courses taught in the college and these shall be the chairmen for the university unless otherwise mutually agreed.

and section 1(p) reads:

The University shall not duplicate instruction in arts, humanities, and social sciences offered by the federated colleges unless the Board of Governors of the federated colleges agree to such duplication.

Waterloo College interpreted these sections as guaranteeing that “it would become the arts faculty of the University of Waterloo with control over the arts programme of the University.” Further, the College assumed that it “would be responsible for undergraduate and postgraduate arts programmes and allocated representation on the Senate of the University of Waterloo commensurate with its pre-eminence as the Faculty of Arts.”
Whatever may have been its thinking before it had any faculty, any students, any campus or any teaching facilities, the Associate Faculties in 1960 (now the University of Waterloo) were not prepared to accept the Lutheran interpretation. The two controversial sections in the agreement cited above state that mutual agreement is required. Unfortunately, they did not make any provision for a situation in which there would be no mutual agreement and that situation was now upon them. Somehow, it had to be resolved.

Although he was the central figure, the man in the middle, and therefore the butt of many charges and counter-charges, to this day J. G. Hagey asserts that up to the moment of the final break he not only hoped for but expected that the difficulty could be resolved. Not many others who were immediately concerned took this position.

Although the Cord Weekly carried a banner headline in its January 15, 1960, issue: “Federation Achieved” the story underneath indicated that the students of the College had some reservations: “Certain students may question the validity and prestige of a degree now that federation with another* university has occurred.” As for the students of the Associate Faculties, they were generally apathetic. They never had been integrated with the College, had gradually come to think of themselves as an independent entity and when negotiations broke down one of the students summed it up in the words “they [the College] broke with us.”

At the faculty level feeling was much more clearly defined. In the previous two years, those members who were, strictly speaking, members of the faculty of Waterloo College but had been primarily hired to handle the needs of the applied science course (primarily those in pure science and mathematics) had come to identify themselves with the Associate Faculties. On the other hand, those who were almost exclusively devoted to teaching students of the College, tended to retain that identifica-

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*i.e. a university other than the University of Western Ontario.*
tion. When the break came the entire Mathematics Department under R. G. Stanton almost as a matter of course moved to the newly created University of Waterloo. So did W. H. Bexton who had been involved in setting up the first aptitude tests. Others from the College who chose to continue with the University of Waterloo were the Director of Adult Education—G. Elmore Reaman—and James McKegney of Modern Languages, Carl Miller in Economics and J. W. Dyck of the German and Russian Department. Behind these moves was a history of a good deal of internal ferment within the two faculties which had been developing in the previous years.

At the level of the boards of governors the situation originally seemed clear enough. The board of governors of Waterloo College, after some prodding from the University of Waterloo, eventually accepted federation with the University. This decision was reversed, however, at the annual meeting of the Evangelical Lutheran Synod of Canada which had the final word. Prior to this feelings had begun to run high and the protagonists for either course became more militant. Seen in the perspective of success, the events of this critical year, 1960, tend to appear as little more than a local squabble. At the University of Waterloo today there are scores of faculty members and hundreds of students who don't really know why or how it has happened that there is another university called Waterloo Lutheran a couple of blocks down the street. As the years go on what residue of bitterness still remains will be dissipated until nothing is left but a normal healthy inter-university rivalry. But in 1960 no one was feeling very mellow.

To sum it up, Waterloo College wanted to attain control of the arts programmes at the University of Waterloo through having its Dean of Arts also Dean of Arts of the University and by having a majority in the Senate. They felt proud of their past and had some understandable doubts as to the prestige which a University of Waterloo degree might carry at that time. They felt they were in a position to, and ought to, have a strong voice in the formation of the new university and the development of that very
necessary prestige. It should be remembered also that we had not yet reached the era of the new "instant" university. Every precedent in higher education in Ontario indicated that it took many many years for a university to achieve acceptance and recognition. It was not easy to have much faith in the possibility that a university could become nationally, even internationally, recognized within a few years. It must also be stated that they did not have complete confidence in the president who did not have an academic background or as J. G. Hagey himself has put it, "They asked themselves after all what does he know about it?" Indeed Hagey will go even further and agree "they had good reasons to be sceptical."

On the other hand those who had been intimately associated with the development of the Associate Faculties had assimilated the dynamic which had been generated by this new venture. As they aligned themselves with the new University of Waterloo their position was positive. They were not fighting the Lutherans; they were fighting for a new kind of university which, no matter how often it fumbled, changed its mind, accommodated itself to new pressures or had to correct its own mistakes, it somehow had achieved an intensity of purpose which students, faculty, administration and governors believed in without reservation. They knew they could make a new kind of university and they were not going to let anything stop them.

The community in which all this was occurring was distressed. In simplest terms, they wanted a university and they were afraid the dispute might prevent its realization. A Citizens Committee was formed to hold an inquiry and their activities were helpful in securing a settlement, uneasy though it was. The alumni of Waterloo College were equally perturbed. An issue of the Alumni Association Bulletin attempted to clarify the situation. The University of Waterloo felt it was inaccurate but Hagey, still trying for his original goal, refused to reply publicly at that time. Ultimately, of course, the University of Waterloo had to explain why it had to set up its own Faculty of Arts.
For some of those who were involved there was much heartbreak. Inevitably many personal things were said and done which only time can erase. In some cases considerable individual fortitude was required to withstand the slings and arrows which were flying in every direction but as far as the University of Waterloo was concerned no one lost faith. As usual they picked up the pieces and carried on with the building.
THE STRUGGLE FOR IDENTITY

In the final analysis, the dynamic of a university is difficult to document. It cannot be found in the charter, statements of policy or rules and regulations. Rather, a modern university is the result of the interaction between the community it serves (which also supports it) and those who gather together in another sort of community—a university—and by training, experience and dedication assume the responsibility of bringing the human intelligence to its highest pitch of effectiveness through formal training. What happened when the University of Waterloo and Waterloo Lutheran University decided to go separate ways was that two groups of these academic "professionals" had developed different concepts as to how a new university could best realize this goal. Those who remained to develop Waterloo Lutheran University believed, with ample historical precedent to reinforce them, that the traditional evolution of universities in the Province of Ontario was the best and, indeed, some of them thought the only route which would lead to their ultimate acceptance as a university in the academic community of the nation. Those who identified with the University of Waterloo not only believed that the time had come for precedents to be ignored but that in the contemporary context the needs of the outside community could best be met (and some of them said could only be met) by relying upon innovation, experimentation and an acute sensitivity to what was immediately required of higher education.

To the final moment of separation it had been the hope of J. G. Hagey that a compromise between these two attitudes could be effected. More than anyone else he had a deeper, longer and
more personal involvement with Waterloo College. He was an alumnus; he had sat on the board of governors; he had become the president; he had conceived the Associate Faculties as a means of developing the College. For him, therefore, many long-held personal attachments which tended to predispose him toward the Lutheran position had to be weighed against the facts of the situation as he now saw them.

In a nutshell, the situation was that innovation, experimentation and adventurousness were already providing every indication that a new university could be successfully achieved—and quickly realized. Hagey himself had taken the lead in exploring and applying new methods. He found that the excitement generated by freedom to experiment attracted able and imaginative men both from the world of education and the world of business. These men, working together, were the sources of the identity which the University of Waterloo eventually achieved.

The University was singularly fortunate in the academic people who first came to it. They provided a ginger group, sometimes known as “the fearsome five,” which provided the intellectual stimulation without which no university can grow.

Kelley, the first dean of science, of course had been in from the start. He was completely committed and deeply involved in every aspect of the formation of the University. It is generally believed that the heart attack which caused his untimely death was a direct result of overwork. His energy and dedication were infectious and made the eager young academics who came to Waterloo feel they had come to a place where their own energies would not be stifled.

All the early faculty came because they believed in the potential of Waterloo. Although he was originally hired by Waterloo College, Dr. Ralph Stanton, young but already recognized as an outstanding mathematician with an assured academic future, came to Waterloo because he believed that here was a place where his energies could be focused on building and creating a department of mathematics in tune with the dominant role which
mathematics plays in modern society. Within only a few years he had made his point. The early students almost to a man recall Stanton as the outstanding academic figure they encountered first at Waterloo. George Dufault, who had been instrumental in attracting Stanton to Waterloo, had an ulterior purpose in mind. He knew that when he approached industry seeking jobs for the first co-operative students he had to assure prospective employers that these students were getting sound academic training. He recounts that the one name which convinced those he approached in industry was that of the head of the mathematics department. The general feeling was—"if Stanton is there it must be academically reputable." Stanton himself was no mean recruiting officer for both faculty and students with the result that, long before Waterloo was known for much else than its unique co-operative feature, outstanding graduates from Ontario high schools were coming to Waterloo because the word had got around that there one would find "one of the best mathematics departments in Canada." In the early years, particularly, Stanton's influence was very strong. His interests extended far beyond mathematics, his contacts in the university world were wide ranging and he was deeply involved in the academic development of the university in many fields. There are many who would say that Ralph Stanton was the most important single individual in the formative years of the University of Waterloo; certainly he made an outstanding contribution to the University's development and in addition to all this he became the first of those figures so dearly beloved by university students—"a character."

In the university atmosphere the keenest minds are tempered by hardheaded debate. One great mind has never made a university, but rather the interaction between many lively intelligences. These were there from the beginning. One of the first to come—in the summer of 1957 but after the first classes had started—was T. L. Batke, now Academic Vice-President of the University. With a doctorate in chemistry from the University of Toronto, Batke had been in industry. He is an
excellent example of the type which tended to predominate the faculty of the University of Waterloo in its early years. By training and experience he was, at this time, committed neither to an academic nor an industrial career. He had tried both with considerable success. In the decade prior to his arrival at Waterloo he had alternated between teaching and industry. He had been associated with three large corporations and had taught at the Universities of Toronto and Massachusetts. Like a good many others who came in the early days, he had a personal decision to face. Up to this point he had not found fulfilment either in university work or in industry, but here at Waterloo with its co-operative feature there seemed to be an interesting and challenging combination of academic and industrial features which would be worth giving a try. But more than that, the University’s proven willingness to try new things was a strong magnet. In the combination of personalities which dominated the formation of the university’s academic character Batke has played the role of synthesizer. Deeply thoughtful and calmly logical, he has been able to bring together many of the best features of a multitude of original and zealous plans which are always being concocted at Waterloo. In his role as Academic Vice-President he will give a sympathetic hearing to any group or any individual member of faculty. He will be stubborn on only one point which is best summed up in his own phrase “academic excellence.”

Ronald Bowman and J. A. Cowan were two other early faculty members who were also attracted by the potential at Waterloo. They, with Kelley, Stanton and Batke, comprised the first academic advisory committee. Both were physicists. Cowan had been associated with the Defence Research Board Electronics Laboratories from the time he had received his Ph.D. in 1950. Always a believer that “teaching is as important as research” it was an easy step for him to move from the research laboratory to the classroom. For the previous five years Bowman had been a specialist in instrumentation at Orenda Engines Limited. He had very strong views about the practical application of physics and
came to the fledgling university with many ideas on this subject. As it turned out the university did not quite follow the route which Bowman had hoped for and eventually he left, but in this formative period, like the other four, he made an active and valuable contribution.

These somewhat vociferous five who so strongly influenced the academic tone which came to pervade Waterloo, became even more fearsome with the addition of a sixth member in 1958 in the person of Dr. Douglas T. Wright, the first dean of engineering. When asked why he came to the University of Waterloo, he replied, "I don't know" but anyone who knows Doug Wright and his keenly analytical mind has difficulty in believing that he does anything without a formulated reason. Like Stanton, Wright was academically established at—Queen's University in Kingston. Full of bouncing vigour, and sometimes almost literally bursting with new ideas, he had been watching very closely the sudden upsurge of new faculties of engineering in Ontario. He says he analyzed each of them, related their prospects to the overall situation, and came to the conclusion that it was unlikely all of them would succeed. When he looked at Waterloo (the one many would have predicted had the least chance of success) he made these observations: "It was held in no esteem and therefore had nothing to lose so we could try anything. It gave us the licence to be radical." Here were qualities with strong appeal to a man like Wright. His mind was teeming with things he would like to try and, seen in this light, it is quite logical and no mystery at all that he would choose the university where he had the best chance of trying out his own ideas. From the moment of his arrival on what there was of the campus, Wright made his presence felt forcefully until he recently retired from the deanship.

Backling this active, strong-minded and strong-willed group was a small faculty, mostly young, all enthusiastic and most of them appointed originally at the lecturer's level. The first batch of appointments included Harold Ellenton, the other professor in science at Waterloo College prior to the Associate Faculties, Donald Irish, George Pearce, Geoffrey Power and Errol
Wallingford. The next lot of appointments included Ronald M. Davies, Rex M. Guest, Albert R. LeFeuvre, James D. Leslie, Donald McPherson, John R. Mills and Robert A. Snyder.

In addition to his teaching duties, Irish acted as secretary for the Academic Advisory Committee. He was succeeded late the in summer of 1958 by Alan P. Gordon who had been appointed General Secretary for the Associate Faculties and later became the first Registrar of the University. Gordon, only three years out of university (Toronto) was the first really full-time “administrator” of what became the University of Waterloo. The others held joint appointments with Waterloo College and the Associate Faculties. Of these one of the most active from the beginning was A. K. Adlington, now Vice-President, Operations of the University. A University of Western Ontario graduate in economics and political science, he came to Waterloo College as Business Manager in 1955 from industry. When he made the move he believed, as a result of conversations with J. G. Hagey, that the College was on the brink of a new and exciting development—as indeed it was. Despite his reputation at the university for hard-headedness, Adlington is a sensitive and idealistic man who felt that his administrative background could be put to good use in a new academic venture. In men like Adlington and Gordon there is much the same kind of combination which predominated in the original members of faculty—less of the traditional ivory tower; more actual experience with some phase of life outside the confines of a university and yet with a persistent and dominating interest in academic values. These two, along with Bruce Gellatly, then Adlington’s assistant and now Treasurer of the University, formed the nucleus of the administrative side of the University of Waterloo.

Of course people like Emery and Dufault wore many hats, especially in the first year, and a good number of them were administrative in character. As Principal of Applied Science, Emery was involved in everything from curriculum planning to the design of the first permanent building until he left in the fall of 1957 to continue his graduate work under a Sir James Dunn
scholarship at Queen’s University. Although he was on leave of absence but continued to be involved in the development of the University through the following winter, his many original administrative duties gradually became the responsibility of other people on campus. One of the original members of faculty testifies that “even after he left Emery was present at every meeting. He had planted his ideas so firmly that, long after he had gone, his thinking continued to dominate the University and direct its development.” In addition to the many aspects of his work as first co-ordinator, George Dufault was also a sort of jack-of-all-trades at this period. “We just bashed each problem as it came along” is the way he puts it. Amongst his other duties he had a part-time teaching load, first in physics and then in engineering. In the summer of 1958 he became a full-time member of the faculty of engineering and has devoted himself to teaching ever since. A third person who was involved in many things was Paul Meincke, a structural engineer who had also been attracted to Waterloo by Emery. Although he came to teach, his other skills were obviously useful and were employed extensively particularly in the first planning for the physical plant of the new university. Ultimately Meincke too became a full-time faculty member in the department of civil engineering.

In addition to these people, there were others who were active in the formative years. There was Mrs. Doris Lewis, the librarian at Waterloo College, who became involved in the library needs of the Associate Faculties and when the break between the College and the newly formed University of Waterloo occurred, continued on with the University and is presently its librarian. G. Elmore Reaman who had had a long career as a school teacher, editor for a publishing house, founder of the Boys’ Training School, Bowmanville, and head of the department of English at the Ontario Agricultural College, Guelph, had been brought to Waterloo College first as dean of men and part-time instructor in English and then, in 1956, he became Director of Adult Education. The latter appointment was another move on the part of Hagey to build up the College,
to increase its relationship with the Twin Cities community and add another dimension to the edifice he was building to become a university. Like Mrs. Lewis, when the break occurred, Reaman continued with the University of Waterloo as Director of Adult Education until his retirement in 1962.

In 1958, A. S. Barber, with a long background in industry (General Motors and Union Carbide), came to the University as Director of the Co-ordination Department. Barber was the first member of the university staff who had actually participated in a co-operative engineering course. With his background in industry and his familiarity with co-operative education, Barber provided a much-needed liaison between the faculty, administration and students. In addition to his contribution of setting up one of the most effective co-ordination departments in higher education, Barber too made a definite contribution to establishing the identity of the University.

Indeed, it was through this somewhat miscellaneous group that the University achieved identity. In all of them we find one common ingredient: an eagerness to accept the challenge to do something new and worthwhile in higher education. Each in his own special sphere of interest had many ideas which he wished to implement; each, a rugged individual, had the fortitude to fight for his own particular cause. Together they generated a dynamic which was quite identifiable by 1959 or 1960 and which unquestionably was distinct from the prevailing atmosphere at Waterloo College.

The University of Waterloo had its genesis in conflict, but not in "the conflict" which the citizens of the Twin Cities area usually associate with the formative years of the University. Although, as the University struggled to achieve validity in its own right, it appeared that a battle was being fought between a denominational college and a non-denominational institution, the real disagreement was at a much deeper level, which even a good number of those who were actually involved in the conflict do not recognize to this day. The fact is that the group which continued as Waterloo Lutheran University represented one approach to
higher education; the group which formed the nucleus of the University of Waterloo had quite different characteristics. We have just seen what kind of a group they were. When one puts together their dominant characteristics and attitudes a philosophy of education emerges.

The battle at Waterloo was by no means unique. In superficially different forms it has been waged time and time again throughout North America; it still continues and probably will never be finally resolved because there is no absolute right or wrong in the solution. Rather it is a matter of belief, an article of academic faith.

In higher education there are two major schools of thought. On the one hand there are those who believe that the needs of civilization, as met by a university, are best served when the university is able to make its academic decisions without regard for the immediate needs and pressures of contemporary society. The argument is that a university represents a collection of some of the best brains of the times; these people can take a more objective view, be more analytical, keep their values in the perspective of man's accumulated knowledge and, in short, know better what is good for the society the university serves than the society does itself. This approach, of course, in the world of education can be closely equated with the approach which the church takes in determining what the moral values of society ought to be. On the other hand, there are those who reject the "ivory tower" theory. This school of thought believes that education is best accomplished when there is a lively interaction between the academic community and the larger community which it serves. The members of this group tend to be much more pragmatic and yet more revolutionary. They feel they are much more realistic; that they are more immediately in tune with their times and that their highly developed intellectual skills, far from being confined by the demands of contemporary society, rather are challenged. They believe that a healthy awareness of what the world needs now is the true concern of the scholar.
Now cast a backward glance at those who, we have seen, first came and developed the University of Waterloo. Very few of them had a background of experience which was confined only to the university. Most of them had been active both in the strictly academic context and in some other form of activity not restricted to and often quite apart from the university. The board of governors was made up of professional men, businessmen and journalists, all by the nature of their work very much aware of the immediate demands of the society in which they lived. The President had spent his life, both his business and his leisure hours, closely related to immediate community concerns. Even those members of the original faculty whose careers had been primarily centred upon scholarship, teaching and research, were adventurers far from satisfied that what they had experienced in their academic careers up to this point represented the best in higher education. And, finally, remember that among the first students there was a far higher than average quota of those who had interrupted their schooling and had become involved in non-academic activities. It would have been strange, indeed, if such a group had produced a traditional university. It would have been equally strange if they had become absorbed by those who held a more traditional view of higher education as represented in the Waterloo College group.

The identity of the University of Waterloo did not emerge because it was in conflict with a sectarian college. It emerged out of the people—students, faculty, and administration, who first became associated with it.

Translated into more concrete terms, Waterloo had to do things which no other university in Canada had done before. Unlike any other Canadian university, its first students enrolled on the understanding that under the co-operative system the University would see to it that they had suitable employment during their work periods. This meant that the University had to develop a much closer working relationship with industry than any other in the country, and through A. S. Barber and his co-ordination department this was accomplished and continues with increasing success.
What started ten years ago remains true today: no other Canadian university has nearly as much continuous, close relationship and sensitivity to the industrial world of this nation as Waterloo.

From the beginning the faculty was determined that it was capable of and would in fact play a dominant role in the planning and building of the new university. On October 27, 1957, the Academic Advisory Committee submitted memorandum No. 1 to the President of the Waterloo College Associate Faculties. They made their position clear:

As soon as future curricula, future needs for future expansion are considered there immediately arise questions that need answering, concepts that require clarification, or decisions of the administration and Board of Governors which require further elaboration and discussion.

It is the feeling of the committee that it can perform adequately its functions only if it satisfies itself that it thoroughly understands all the implications of the principles upon which it must make its decisions. It is the feeling of the committee that the administration and the Board of Governors would wish it to do this.

Consequently, it is the intention of this committee to seek guidance from both administration and Board of Governors, to ask for clarification of all principles wherein it feels that there is any element of vagueness, to ask for further discussion of certain decisions, and if necessary (where it feels that it is moot *sic* to do so) challenge those decisions. It will be appreciated that this is not done to embarrass anyone or to carry hint of depreciation. It is to bring another point of view to bear on certain aspects of planning, and to aid both the administration and the Board of Governors in their constant revision of plan and thought that must necessarily accompany the growth of an institution such as ours.

Here was no faculty which was going to isolate itself in its libraries and laboratories and let someone else worry about the planning and the building. The result was that especially in the formative years the faculty exercised a strong hand in the shaping of the University of Waterloo. For example, as we shall see later in more detail, it was the members of faculty who looked far enough into the future to insist that the university be established on the site where it is presently located. In their first memorandum the
Academic Advisory Committee warned the Board "they may expect to receive a goodly number of memoranda from this committee" and they did. The recipients of the memoranda, the board of governors, did not make the fatal mistake of thinking that because ultimate power was vested in them so too was ultimate knowledge. From the beginning they responded energetically to the ideas which came from the faculty. Of course there was not always agreement—the Board was no rubber stamp—but they did come together in the spirit which dominated the total operation. As we shall see, they assumed unprecedented financial responsibility and risks in order to keep the University growing to meet the demands of its extremely ambitious faculty.

The president, particularly, along with his skeleton staff of administrators, was the man in the middle, an often unenviable but always an exciting and challenging position to be in. He had to learn a great deal and he had to learn it in a hurry. He had to learn how to approach and handle government in order to get financial support. He had to accept the fact that universities have to raise millions of dollars from the private as well as the public purse and he had to become involved in the hête-noire of all university presidents—fund-raising. He had to try to understand the academic mind and interpret it to his board. He had to learn to accept the fact that, no matter what he decided or what he did, there would almost always be somebody who was not satisfied.

The making of a president at Waterloo is a story in itself, but J. G. Hagey, who undoubtedly has made many wise decisions and also his share of mistakes, has kept the faith. It is quite obvious from his early reports to the board of governors that he quickly assimilated the kind of university which was developing, believed in it and made it his life's work. The University of Waterloo as it stands today may not be everybody's ideal university, but it is Hagey's ideal university and that is exactly as it should be.

That means, by its very nature, the University cannot be static. It will continue to reach out to meet the needs of the world around
it. Its students, its faculty, will make their demands and insist on being heard; the board of governors, still committed to weighing and trying to meet the requirements of the scholarly community it serves, will support justifiable innovation; the president will still be in the middle and his administrative staff must continue to support him with ever more efficient procedures and out of it all the University of Waterloo will continue to grow.
In a materialistic society one of the easiest, although quite often one of the most misleading, ways to comprehend success is to recognize it through concrete and tangible objects. In the case of an individual, each era of civilization produces its own set of these concrete things which these days we call status symbols. For universities the same kind of judgment is made in terms of its campus which includes the grounds, the buildings and the facilities housed in the buildings. A certain type of purist will argue that these are false values. Especially in the case of institutions such as universities it is fairly commonplace to hear views expressed such as “a good mind does not need an air-conditioned room as a prerequisite to working efficiently.” This is true as far as it goes, but the fact is that one of the chief activities of mankind has been the control of his natural environment and the creation of the kind of environment in which he thinks he wants to live. There is an interaction between man and his physical environment. This applies in universities as much as anywhere else. And we know it affected the first students at the University of Waterloo. They are on record as having felt that an element in the university experience was missing because they came to an institution which, for them, had no campus. Today the University of Waterloo has one of the largest campuses in Canada in terms of acreage and that section of it which has been developed in the past ten years is a full-fledged campus in the usual sense of the word. It is also a controversial campus in terms of architectural style, construction methods, planning and design.
As in everything else, the physical development of the university of Waterloo is a composite of trial and error, some luck, a willingness to try new things and the pressure of necessity.

The original concept was that the hoped-for university would be located on the existing campus of Waterloo College and the land immediately adjacent to it. We have seen that the first two buildings, the temporary annexes, were located on a parking lot in the College grounds. At this point no one associated with the venture had a very clear idea of what proportions it might reach, but by no standard could they be accused of "thinking too big." The early Board minutes are filled with detailed reports of investigations into the cost of some of the properties immediately adjacent to the Waterloo College site. Even in this rudimentary period of the university's history there were hold-outs, land owners who placed a highly inflated value upon their holdings simply because they thought that the development of Waterloo College made it essential that their land be acquired. It did not take the Board long to decide that perhaps a better bet would be to look west across Albert Street to the next block. There were no commercial establishments in this area, land could probably be acquired more easily and at lower cost and with the locating and development of the Seagram Stadium and Gymnasium this block made a logical link between the existing buildings of Waterloo College and the athletic facilities.

A. K. Adlington, then Business Manager of the College, now became deeply involved in the activity which has dominated his career ever since—the juggling of dollars for estimated needs. He found that to acquire the whole block which would amount to approximately 50 acres, the cost would be approximately $1,000,000. Time was pressing, a major new building had to be erected immediately and the Board was experiencing great difficulty in making up its mind. Perhaps the most graphic illustration of the confusion about the site of the university is a fund-raising booklet called "New Design for Higher Education" in which photographs of the new chemistry building actually under construction are included showing it in one position while
a sketch map shows it in quite a different location—on the block across from the original college campus west of Albert Street. So many things had to be done simultaneously there was no time to wait.

But the "fearsome five" and the faculty they represented were doing some thinking on their own and in their October memorandum to the president they made their position quite clear. They strongly asserted the premise "A university is an academic community. Its physical planning and development cannot be separated from its academic planning and development." They cited the possible future scope of the university and stated their opinion "that if a University of Waterloo is to be built in the back yards of Waterloo College and adjoining houses, the citizens of Ontario, whose money is being used, will cite the project as a prime example of limited vision." Their alternative was either to move to a large tract of land which had been offered to the university by the city of Preston, or a tract of open land farther down what was then known as Dearborn Street and is now University Avenue, which had been originally acquired for the purpose of creating a housing subdivision but was available to the University. The memorandum was backed up by a verbal presentation to the Board by Bruce Kelley at the Board's November meeting and not much headway was gained but, as usual, it left the door ajar. At that meeting the Board decided "that the Chemistry Building be located on the present campus site as designated in the architects' plans," but they also went on record as saying that they "recognized the need to acquire additional land for the future development and the desirability of not having our buildings close together." Here is a typical University of Waterloo interim decision. It then exasperated and continues to exasperate many members of faculty. In essence it represents the problem of attempting to coalesce immediate practical considerations with equally logical but longer range planning. At that meeting the Board did not see how it could possibly have its Chemistry building (which the faculty also
insisted was needed immediately) built in time if they changed the site.

But the Board did change its mind, not for the first time and not for the last time. One of the great problems in administering a university growing faster than any other university in the country was the difficulty in assimilating and understanding the implications of such phenomenal growth. Time and again under the pressure of immediate need this Board has come precariously close to making a decision which was justifiable in the immediate context, but which would have been disastrous from a long-range point of view and then, by a miracle of good judgment, shying away from it at almost the last moment. The wonder lies not in the fact that they came close to making mistakes, but rather that they have made no major ones. So it was when in January, 1958, it was announced that the University of Waterloo had acquired 237 acres west on Dearborn Street, not adjoining but “within walking distance of the College.” In terms of the university’s ultimate development this was one of the most critical decisions the Board has ever made and it is most significant that in making it they had accepted the faculty’s dictum that physical planning and academic planning could not be separated. In physical terms, the real beginnings of the University of Waterloo stemmed from this decision to acquire a large parcel of land capable of both speedy and imaginative physical expansion. As is usually true when things turn out right, everyone involved becomes a mutual admiration society. The faculty can take credit for it, the Board can take credit for it, the administration can take credit for it and in this case it was a combination of all three.

The urgency which bedevilled the board of governors to choose and finalize a campus site was an extension of an even more immediate need—teaching and laboratory facilities. The first annex which was ready by July, 1957, had an approximate area of 3,800 sq. ft. and was built at a cost of just under $18,000. It was no sooner in use than the Board had to concern itself with annex 2. The experience with annex 1 indicated the next one would have to be considerably larger. This too was proceeded with
immediately—4,500 sq. ft.; this time at a cost of a little over $26,000.

It had been realized from the first that a permanent science building would be required, and while the annexes were being constructed work was proceeding in designing a science building. Here again everybody got into the act. True enough, a firm of architects were retained, but the ever-inventive C. L. Emery had been exploring the possibility of precast concrete as a method of lowering construction costs. Again his enthusiasm carried the day and it was determined that the first building at Waterloo would employ this type of construction. It has been used in many of the buildings ever since. As far as the equipment was concerned, the faculty had to make the determination, and this was done by a group under T. L. Batke. Paul Meincke, a structural engineer, did many of the first sketches until out of this truly co-operative effort the planning had reached the stage where tenders could be called. The building was completely functional, rectangular in shape with no ornamentation of any kind, and faced with buff-coloured brick. The building is still very much in use. It is by far the least impressive building on campus, but in comparison to the annexes it was remarkably substantial, an impressive physical manifestation of the new university.

Its course was not smooth. When the tenders came in for the Stadium there was such a tremendous discrepancy between them and the estimated costs provided by the architects that the President recommended to the building committee of the Board of Governors that new architects be found.* They accepted the recommendation and proceeded to look for a firm which had experience in “building structures that are functionally designed to meet our known needs and aesthetically satisfactory in keeping with the appearance of the overall campus and its buildings, but without elaborate or expensive external design.” Eventually the choice was whittled down to two firms and of these the one chosen was Shore & Moffat of Toronto. Since that time this firm has

*At this point the Stadium architects were also going to be the architects for the science building.
become deeply involved in the physical development of the University. Up to this point they have been the architects for most of the buildings on the campus. As the concept of the university and the needs it would be required to fulfill changed, Shore & Moffat were ever-ready with a new master plan to translate current thinking into physical reality. Since aesthetics is inevitably an area of controversy, no building has ever been erected on the campus without full and very often heated discussion. In the early years particularly it was very difficult sometimes for the architects to communicate their total vision of what the campus would look like to members of faculty and administration. Indeed, it is only within the last two years that the campus has become a recognizable entity. The general feeling at Waterloo, in the community at large, is that this is an interesting, functional and exciting university from an architectural point of view. Again it is a matter of taste. There are no ivy-covered walls at Waterloo, virtually no stonework, and certainly no gothic towers. It is a clean cut, straight line university, now a complex of interesting shapes which, generally speaking, complement each other to form a stimulating whole.

It is obvious that at Waterloo whatever would emerge would not be the result of a firm of architects being given a completely free hand. As always at this university everyone concerned—students, faculty, the administration, the building committee of the board of governors, and the Board itself, have all been actively engaged and involved in the building of each structure on the campus. Right in the thick of it all was E. M. "Mike" Brookes, who came to the University as superintendent of buildings and grounds and became its first director of physical plant and planning. During his years at Waterloo, Brookes fought tenaciously for a campus which he could envisage, but which sometimes eluded his colleagues. Highly creative himself, he also was in tune with Shore & Moffat and every so often fought on their behalf for the new buildings being planned. Trained in Great Britain, enthusiastic (almost a required characteristic for a Waterloo original) Mike Brookes believed that modern,
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functional, low-cost buildings could be designed and placed in a setting which was appropriate to a university. Like everyone else he made his share of false starts and sometimes got carried away by the intensity of his own enthusiasm. For example, there was the matter of the peacocks. As Brookes envisaged the campus, which is rolling in nature, the clean functional buildings would be grouped to form quadrangles. To temper the monotony of straight lines, not only would the natural undulations of the campus site be exploited, but artificial mounds would be created. In a sense it would be a split level (many levelled) campus. Many trees would be planted, the grass would grow thick and green. In all of this Brookes was backed up by the great landscape architect, Sasaki, who was brought in as a consultant. In Mike Brookes' mind there already was a beautiful smoothly landscaped campus on Waterloo's 237 acres, and it was easy for him to make the next step. Why not ornament it further with the natural glory of the most decorative of all birds, the peacock? Some young peacocks were actually bought and carefully nurtured. They may still be somewhere on the campus, but it is doubtful if they will ever be let loose to roam amongst several thousand high-spirited undergraduates.

Other ideas which Mike Brookes generated, fought for and pushed energetically have been realized. When the first arts building was in the planning stages it was agreed that an auditorium to accommodate at least five hundred people was badly needed. Twenty-five miles to the west of Waterloo another daring experiment had been realized and given concrete form—the Shakespearean Festival Theatre at Stratford, Ontario. Brookes was a devotee of the arts; he was entranced by the theatre which had been built on the banks of Canada's Avon. As he thought about it, inevitably the question formed: Why not make the auditorium in the arts building a small replica of the edifice at Stratford? The result is the Arts Theatre, a delightful and unique adjunct to the University of Waterloo which is the envy of almost every theatrical company in Canada. Of course there are those at Waterloo who consider the theatre a frill, and over the years many people at the
University have wrestled with the problem of how to make the best use of it. Gradually this is solving itself. The students respond to it. It is used for large classes, large public lectures, and finally is developing a full-fledged programme which makes proper use of its stage facilities and enriches life on the campus.

From the beginning it had been assumed that the University would very quickly need residence accommodation for students. But the increasing pressure on Waterloo to enrol more and more students each year and, consequently, to have proper teaching facilities available, kept pushing the construction date for residences farther and farther into the future. It was not until 1964 that the University reached the position where it could not put off building residences any longer. Off campus housing for the students of the university had become an acute problem. Investigations indicated that some students were being exploited and that others were living in conditions that were below the standards required by the public health authorities. It was decided that within a very short period of time the University had to have accommodation for over 1,000 students. Once again Mike Brookes had a unique plan. Instead of building the conventional type of university residence which, the larger it became the more barracks-like it was in nature, Brookes said “let’s build a village.” A President’s Committee under the chairmanship of James Scott was appointed whose membership included representatives from all the faculties, the administration and, for the first time, the students. The architects were enthusiastic and gradually a concept was translated into a concrete plan. The Student Village at the University of Waterloo is another of its unique features. Just in the process of completion, over 1,200 students live here in a complex of small “houses”, each three stories high, each floor accommodating approximately fourteen students with its own kitchenette and small lounge. In the centre of the complex are four dining-rooms on one level and on the upper level a large meeting hall, chapel, small shops and a town hall which houses both the administrative offices of the Village and of the student-elected representatives who govern its activities. The majority of the rooms are singles. The students have
a place of their own where they can express their particular individuality, they live in a small group which in turn is part of a slightly larger group, which in turn comprises the total Village. It is still too early to tell exactly how much of the original concept will work out in practice, but the Village at Waterloo has already established a powerful identity and is the envy of many other universities.

In 1957 when the science building was being planned (that is the first chemistry building) the next building which was to be completed was a library. Indeed, when Shore & Moffat were retained as the architects for the chemistry building it was suggested that they also start work on the elementary planning for the library. In actuality, the library was not begun until 1964. By this time it was a very different structure from that which had been originally envisaged. At the time the library planning began there was a strong feeling on the campus that the existing buildings were dull. The architects, with some reservations, could see the point. They argued, however, that in all their master plans a focal point of some sort was always envisaged. Now it was decided that the library would be the architectural core of the complex surrounding it. The building which now stands undoubtedly fulfills this purpose. Finished in gleaming white, by far the tallest building on the campus, it rises straight and clean. To a considerable degree the arts library is the product of the co-operation of E. M. Brookes and Shore & Moffat, this time strongly aided by the university’s librarian, Mrs. Doris Lewis. Before he could see the completion of his final pet project—the Student Village—Brookes was lured back to his homeland and is currently at Oxford University. He was succeeded by the present incumbent, W. A. Lobban.

During his tenure of office, however, he was largely preoccupied, as was the total administration, by the teaching buildings which were just as urgently needed as the first annex. At Waterloo it seems to be a chronic condition that more space, more facilities, must be created always immediately.

In the early plans the library was to be the second new building erected on the new campus, with a physics and mathematics
building to come next and after that an arts building. With the obvious concentration on engineering emerging (and this included engineering physics at this time) an urgent need developed for facilities to house the physics and mathematics departments, with the result that this building took the first of many priorities over the library.

The mathematics and physics building can properly be considered the beginning of the architectural development of the campus. Up to now all the buildings relate (with minor variations) to the basic design concepts incorporated into this building. It can be considered the architectural pace-setter of the university.

In the first place it was bigger and cost more. As the university has continued to erect new buildings there have been some exceptions to this rule, but generally speaking, bigger, better and costlier seems to be the pattern of campus development. In part rising construction costs account for the pattern, but more important, the urgent needs of expansion and increasing ability on the part of planners to meet these needs have been significant contributing factors. In the chemistry and chemical engineering building, stark and box-like as it was, about all the architects could do to give it some character was to utilize bold colouring wherever possible in the interior of the building. In the mathematics and physics building they continued this practice but they also had more scope. This building, three stories high, consists of two wings and an amphitheatre. The teaching wing, 384' x 72', is very similar to the chemistry building, but the office wing, set at right angles to it, is much more imaginative and pleasing to the eye. Here the architects set the two top stories over stylized arches in the first storey to create a suggestion of the cloister and at the same time not only to appear functional but be functional. With each new building the architects would attempt to be a little bolder, a bit more imaginative, and at the same time keep a basic architectural theme running through all the designs to create an overall impression of architectural integrity and unity. Only one other university in Canada (the University of Western Ontario which has insisted on keeping all its buildings rendered in what is
popularly known as college gothic) can boast of a campus which has the architectural consistency of Waterloo. Indeed, the present result is so impressive that almost all the new universities presently in the making are attempting to follow the Waterloo pattern. This does not necessarily mean that they are copying the architecture, but they seem to have recognized the value of structural consistency in creating an aesthetically pleasing campus.

The mathematics and physics building was put into use in the fall of 1959 although, again according to the Waterloo pattern, the workmen were still busy. It was officially opened by the late Dr. E. W. R. Steacie, then president of the National Research Council, on February 10, 1960. A thousand visitors from the Kitchener-Waterloo area attended the open house which accompanied the opening, coming no doubt to see for themselves just what was going on at this new and at that time still controversial university.

Hard on the heels of the mathematics and physics building came the engineering building, started in the fall of 1960 and described as "the third and largest teaching building to be erected on the campus"—145,000 sq. ft., construction cost $2,465,000. Once more it was urgently needed. Up to this time the mathematics and physics building had been used temporarily for engineering laboratories, as well as for administrative offices. Again the architects were Shore & Moffat who repeated the same theme used in the mathematics and physics building. In relation to the chemistry and chemical engineering building they set it so its two wings formed a quadrangle, the first on the campus. They added interesting touches here and there; some of them not entirely successful. For example, they set a pool along one side of the office wing. It leaked, but it usually lasts out for Convocation day when it is cleaned out and filled with fresh water. Goldfish have been known to sport—briefly—in the water as long as it is there. Like Mike Brookes' peacocks, the pool never really has fulfilled the function for which it was intended. In fact, if one were superstitious he might believe that in the bustling and aggressive atmosphere of the campus of Waterloo there is some mysterious element which resists attempts to get too fancy. This building was
opened, again by a Premier of Ontario—the Honourable John P. Robarts—in April, 1962.

Meanwhile other buildings were under way. Two of the church colleges (these stories will be told in more detail later), St. Jerome’s and Renison, had commenced building on sites on the campus allotted to them by the University. In addition the first arts building was under construction. Set across the stream from the area allotted to the church colleges, the arts building seemed far away from the first quadrangle and its surrounding complex of buildings. It was intended and, indeed, turned out to be, the first building for a new group. Still sticking to the basically functional design, Arts I (now called the modern languages building) utilized a darker coloured brick and, of course, its attached Theatre of the Arts gives it a particular distinction. This building’s particular “frill” is a plastic dome, set in the centre of the roof, which looks as if it comprised a square of many pyramids. When lit at night it is most effective but, alas, it too has been known to leak. The arts building never has been officially opened. It went into service in September, 1962, and promptly gave the then struggling faculty of arts physical identification on the campus.

At that time expansion plans for the immediate future seemed quite definite. The chemistry and biology building and the library would be completed in 1964; a student centre in 1965, as well as a maintenance building. In addition it was expected that two more church colleges would erect buildings on their sites.

In the fall of 1963, pretty well according to plan, construction began, first on the chemistry and biology building in September, and a little later on the arts library. But something considerably more significant in terms of the campus of the University of Waterloo occurred that fall. At that time, including the buildings under construction, almost 100 acres of the original 240-acre campus had already been developed or were in the process. In four years the University had used up over 40% of its available land. At that rate, what had originally seemed to be a vast tract was rapidly shrinking. But something else was growing. When the engineering building was opened (and at that time five thousand
people came to have a look at it) the chairman of the Board of Governors, Ira Needles, said “the University of Waterloo was built on faith budgeting. If Dr. Hagey, our president, had not convinced those of us on the Board five years ago that it was possible to build a university from scratch, this development would never have taken place.” The operative word in this statement is “faith.” But faith is inevitably accompanied by misgiving and doubt. With each new forward thrust there were those who doubted. It was all very well to talk about doing the impossible, but common sense seemed to say that you cannot go on doing the impossible forever. By 1963 it was evident that the co-operative engineering plan was a success and the temptation was great to let it go at that. The gloomy prognostications which some people had made for the future of Waterloo Lutheran University had not been realized. It too was growing rapidly, although not in the same proportion as the University of Waterloo. From the beginning there had been some confusion as to the ultimate aims of Waterloo. There was one school of thought which saw it becoming the “M.I.T. of Canada”; others thought it should become a multifaculty university. In 1963 the question had to be faced. By this time, it was clear that the City of Waterloo was also growing and although the lands adjacent to the university campus were still under cultivation, most of them no longer belonged to the farmers who used them but were in the hands of forward-looking developers. It was now clear that within a short period of time the campus of the University of Waterloo could be hemmed in, a 240-acre unit surrounded by expensive housing and industrial developments. If it were to restrict its vision, concentrate on the basic “Waterloo Plan” its 240 acres would do nicely. But success is a heady thing and the University of Waterloo undoubtedly had had success with its original concept. Now what?

In the first place, the need for tremendously expanded university facilities of all kinds in the province of Ontario was much more apparent in 1963 than in 1957. Now several new universities were in the making and every time a new survey was completed it showed more and more students would have to be accommodated
at the university level. Secondly, the thinking of almost everyone originally connected with the formation of the University of Waterloo had either been modified or changed. Because of its nature, this university was perhaps more closely associated with current contemporary problems and geared to think in these terms than any other university then in existence in Ontario. Under the pressure for survival in the first few years, both faculty and administration had come to think in terms of seeing an opportunity, recognizing it and taking a whack at it. As they undertook to do new things to meet current needs they had found their dynamic in faith, but now a new and important second ingredient had been added—confidence. The first students had now graduated and the campus they left was very different from the one they had started on. They had confidence in the future of their university. So too did the faculty and the Board and the president and his administrative officers. Now, in this year of decision, they took another bold step forward. As we shall see, in 1963 the University was in a far from enviable financial position, and yet the President, largely supported by his administrative officers and staff, and especially by his Vice-President, Finance, A. K. Adlington, recommended that the University acquire an additional 733-acre block of land adjoining the campus.

This extension to the northwest would take the campus to a 500-acre conservation park which had been set aside by the Grand Valley Conservation Authority. It made a beautiful unit and the board of governors, now convinced that they really could do the impossible, accepted the recommendation with remarkably little debate. In purchasing this land and committing itself a million and a quarter dollars expenditure over the next fifteen years for it, the die was cast. The University was not going to rest on its laurels. The University was irrevocably committed to constant growth. It now had the largest integrated university campus in Ontario and it was going to use it. As President Hagey said, “By acquiring this property the university is assured that it will have land available at reasonable cost when it is necessary to expand our
present facilities and when we enter other areas of higher education and research.” No “if,” but a simple and factually stated “when.”

Now all master plans for the development of a 240-acre campus and all existing plans for immediate expansion had to be reviewed. Among other factors at the time, the faculty once more was getting restive. They did not feel the architects were adventurous enough as they struggled to keep construction costs down and yet produce new buildings which would make an increasingly interesting campus. The president and many others of the University family were aware of unkind comments which described the university as a learning factory. Seen in perspective, the ferment about the campus and how it looked was really an extension of the growing sense of pride which all those associated with the University were developing. It was no longer good enough to meet the exigencies of the moment; the University of Waterloo could not be merely adequate. It had to be outstanding. Perhaps the mood of the campus was best expressed by the academic Vice-President, T. L. Batke, in an address to a secondary school teachers’ convention held at the University in June, 1963, when he said “we must first of all begin by refusing to accept and refusing to aim at the often mediocre averages in some other parts of the world. Let us rather search for fitting models of excellence and then strive to achieve them.”

Out of the restlessness of that year an even more dynamic university emerged. In its first five years the University was almost totally preoccupied with looking ahead; now as it looked to the future it had to do so in terms of what was already there. One of the first things it discovered was that there were dangerously few amenities for the students. Within their limited capacities, the church colleges provided the only residence accommodation on campus. The students still had to rely on a cafeteria set up in the old annex (redolent with the sweat of the students of early years) for eating facilities. What common rooms there were were crowded and inadequate. Housing in the City of Waterloo was at such a premium that some students were forced to live in sub-
standard accommodation. In short, in its first five years the University had done little to meet those needs which the first students had felt so acutely. There was still no satisfactory equivalent on campus for the Grand Grill or the Waterloo Hotel. The answer was in the Village concept of residential life which has already been mentioned. Planning began in 1963 and construction was under way in 1964, the largest single project in the university's development up to that date. When completed, almost 1,300 beds; total construction cost $9,100,000. At the same time planning was underway for a second arts building, concrete evidence that the University was fully committed to the multifaculty concept.

By the end of the year it was evident that the University had successfully weathered another crisis, that its restless energy which sometimes could be troublesome was once more in harness (albeit somewhat fretfully) and greatly accelerated expansion had been accepted as a fact of life. Naturally, this mood was reflected in the physical development of the campus.

Originally the library which was ultimately to rise to ten stories was conceived as being built in stages, and the first stage was to be only three storeys which it was expected would do until 1970. Now, committed to unprecedented expansion, the University decided while the building was under construction that four more floors would be added to make it its present seven-storey size. The second arts building was now going to be of two sections; an office and laboratory building matching the original Arts I, and a second building, connected by tunnel, to contain four large amphitheatres, ten classrooms and facilities for closed circuit television.

In April, 1965, the chemistry and biology building did get an official opening, indeed a most successful one. Officially opened by the Minister of University Affairs, Honourable W. G. Davis, four thousand curious citizens came to watch demonstrations and inspect the bewildering equipment of the technological age. Caught up in the go-go atmosphere of the campus, the Minister once more repeated the now-accepted theme for the University of Waterloo when he said "to grow from a standing start to a student
body in excess of three thousand is a remarkable record. Measured in relative terms, it is the most dramatic example of university development to be found in this or any other decade at any institution of higher learning in all of Canada."

Meanwhile, back at the drawing boards and in the committee rooms new projects were being planned. These included a campus centre building (at last the students were to get a place of their own); a physical education and athletic plant; a food services building—including dining-halls and bookstore; and a central utilities plant to serve the university at least until 1970; a major expansion to the engineering complex and a central stores and maintenance building. In addition, the second stage of the student village was to be started. Off campus, but immediately adjacent to it, plans were made to erect a half million dollar residence for one hundred and five male students by the Waterloo division of the Co-operative College Residences Incorporated. Also just off campus St. Eugene’s College, a residence of 50 seminarians taking courses at St. Jerome's College was opened, and Renison College added a 100-bed men's residence wing.

By the fall of 1965, the engineering expansion was underway. It included a three-storey extension to the original engineering building, a third-floor addition to the existing office wing, a three-storey addition to the teaching wing, a one-floor, high-ceiling building to house the design department and the drafting laboratory, and a one-storey high-ceiling extension to the heavy laboratory wing. But engineering needed still more; classroom space was almost desperate. The result was that plans were quickly developed and a contract let to provide an additional 1,270 classroom seats and to incorporate an outdoor amphitheatre.

Now, for the first time, the university began to suffer the pressures of a land squeeze. Although there were hundreds of acres to the northwest, that corner of the campus which had been designated for the faculty of engineering was almost completely used up. To gain the classroom space the first quadrangle, in the early years the pride and, indeed, the only fully finished piece of landscaped territory on the whole campus, had to go. The amphi-
theatre building is interesting and functional, but the quadrangle is ruined. It seems almost incredible that in less than ten years the needs of the faculty of engineering at the University of Waterloo would exceed even the wildest anticipations of those ultimate optimists who were its original faculty members. The University of Waterloo started by thinking big; it is to be hoped that the uncouth crowding of the engineering sector of the campus will be a constant reminder to everyone connected with the University that for the future it has to think bigger still.

Not all the optimistic plans for buildings in 1966 could be realized. Although in 1965 the University broke all records for increased enrolment with a 42% increase, public funds were not readily forthcoming to meet the anticipated construction dates. In addition, of course, the extra requirements of the engineering faculty further inhibited starting some of the proposed new buildings. Sad to relate, once more the campus centre for students was delayed. So too was the food services building and the physical education and athletic building. But, nothing daunted, plans proceeded and a six-storey mathematics and computer building was on the drawing boards. Planned to accommodate up to 3,500 students in courses in mathematics, this building (23,000 sq. ft.; construction cost $6,050,000) was the first to be designed for the University by a firm other than Shore & Moffat. The architects were Webb, Zerafa, Menkes & Matthews. And still another need became pressing. The biology wing, so recently completed, was already inadequate and plans were quickly produced for an addition.

At this writing the campus of the University of Waterloo, which has never been free from the cacophony of bulldozers, steam drills, and all the other sounds of construction from the day that the temporary annexes were cut in half and moved down the street to the new campus, is busier than ever. Sometimes the frenetic pace of construction seems almost to border on madness, but in actuality it is merely the physical expression of a young giant trying to develop his body to accommodate the intellectual ferment which seethes within his brain. Today the student village
is virtually completed as are the engineering additions. The central services complex is in operation. The mathematics and computer building, the food services building, the addition to the biology building, the campus centre and the physical education and athletic building are all under construction.

Not one of these buildings has been built to satisfy some megalomaniacal desire to appear big. On the contrary, if one were to ask the faculty's opinion they would say that all the buildings were behind schedule. The physical campus of the University of Waterloo has developed to meet the needs of four vital and ever-expanding faculties. It is now about time to take a closer look at these faculties in order to understand how and why the campus of the University of Waterloo has become so large so fast.
Although engineering, or applied science as it was referred to in the initial stages, quickly came to dominate the thinking of the planners who were starting the Associate Faculties, it was not there in the beginning. The faculty which was intended to be associated with Waterloo College was science and there was a good deal of random talk about the possibilities of developing courses in business and, ultimately, a school of business. We have seen how Emery focused attention on the needs of technology and developed enthusiasm for co-operative education to Waterloo; how Kelley immediately supported it; how Hagey promoted it and the Board of the Associate Faculties quickly saw the possibilities in the field. But Emery left and Kelley died; George Dufault and Paul Meincke, the pioneers in co-ordination and planning, were anxious to get into academic teaching. Other men had to be found to give leadership and make the plan work.

The immediate academic requirements were almost desperate and they could not be met efficiently until some sort of philosophy of engineering was established. Of equal urgency were the demands made by the application of the co-operative principle, that is the co-ordination of the students’ work terms with their academic terms and the provision of places in industry for them. Fortunately for the future of the University two men arrived on the campus in time to fulfil the requirements. These were Douglas T. Wright who became the first dean of engineering and A. S. Barber who became Director of the Co-ordination Department. At Waterloo co-operation is a meaningful word and neither of these men would presume to think that they could or

The Chemistry and Chemical Engineering Building, first permanent structure on the University of Waterloo campus.
Ronald Mullin, now in the Faculty of Mathematics, was the first person to receive an earned degree from the University of Waterloo—an M.A. in 1959.

President Hagey installs the Hon. Dana H. Porter, Chief Justice of Ontario, as the University's first Chancellor, 1959.
Aerial view of Seagram Stadium and Gymnasium.

The campus in 1961—an aerial view showing the Chemistry and Chemical Engineering Building, the Engineering Building and the Mathematics and Physics Building.
First Arts Building (right) and connecting link to Theatre of the Arts (left).

Theatre of the Arts, patterned after the Stratford Shakespearean Theatre, is the cultural centre of the campus.
A section of the Student Village as seen from the Village Square.

St. Jerome’s College (Roman Catholic).
Renison College (Anglican).
St. Paul's College (United Church of Canada).

Conrad Grebel College (Mennonite).
These men played key roles in the development of the University in its first decade. Left to right: A. S. Barber, Director of Co-ordination; Dr. W. A. E. McBryde, Dean of Science; Dr. N. H. High, Dean of Arts; A. K. Adlington, Vice President, Operations; President Hagey; Dr. T. L. Batke, Vice President, Academic; Dr. D. T. Wright, Dean of Engineering; Dr. R. G. Stanton, Dean of Graduate Studies; and A. P. Gordon, Registrar.

The Arts Library, opened in 1965.
The Chemistry and Biology Building, 1965.

President Hagey accepts the University Mace, presented in memory of the charter Board of Governors member, Dr. S. F. Leavine, by members of his family.
The University of Waterloo Warriors in action at Seagram Stadium.

University of Waterloo cheerleaders let go with the old school spirit.
Float in a typical Homecoming Weekend Parade.

Graduation Ball — the final celebration.
Court yard of the present Arts complex.
Mathematics and Computer Building, now nearing completion for the University's newest faculty—Mathematics.
Ira G. Needles is installed as second Chancellor of the University by his predecessor, Chief Justice Dana H. Porter. President Hagey in centre.
should take the credit for establishing the co-operative programme in engineering at Waterloo on a firm basis. Rather, they would insist that in both areas what success has been achieved is the result of an able group of men working together, firmly believing in the validity of what they are doing.

In 1957, as Wright saw engineering education in Canada, and specifically in Ontario, plans for new engineering schools had been announced which would more than meet the province’s requirements. But Waterloo was different. It alone of all the schools had the co-operative feature. In Wright’s opinion, without the co-operative feature there was no need for an engineering school to be started at Waterloo at all. Waterloo’s commitment to this new approach and its obvious reliance upon it to bring success had implications which were exceedingly attractive to Wright. Amongst other things he was sure it would attract students but, more important from his point of view, it was so little understood and held in such low esteem by traditional Ontario universities that “we had nothing to lose; we could try anything.”

Douglas Wright was a young man whose mind was full of ideas that he wanted to try out. All his previous academic experience had been in the traditional engineering schools where what is known as the “hard hat” philosophy of engineering was not only practised but flaunted. This was common to all engineering schools in the country. For many years the engineering schools of North America seem to have dedicated themselves to asserting their identity by insisting that they and they alone turn out men from the universities trained to meet the practical requirements of an age of increasing technical and technological advance. In some curious way it became a badge of honour for an engineering student to appear to be illiterate. A primitive doctrine of the virtue of work evolved centring around the fact that engineers were required to spend longer hours in the laboratory and classroom than any other group of university students. In some way not apprehended by other members of the university community this overburdened timetable was supposed to assert superiority.

Yet, as Douglas Wright well knew, a considerable portion of
this time was spent on mundane tasks which were perhaps relevant to engineering training but hardly of university calibre. As Wright saw it, the co-operative programme if properly applied could take a good deal of the practical training of an engineer off the campus, cut down his hours in laboratories and classrooms and enable the faculty to set up a curriculum which would include a very heavy content of mathematics, computer science and rigorous analytical courses. And they would be, in Wright’s phrase, “tough courses.” By tough Wright meant courses whose content was so rigorous that, according to the standards of the times, only honours students could complete them successfully. Wright did not believe this. He was convinced that if “trivial laboratory time” could be eliminated and some lecture hours trimmed the average university engineering student could be successful if he were willing to take the extra time thus provided to work and study hard. When he came to Waterloo thirty to thirty-five hours a week in the classroom was standard for engineers; Wright set about cutting it down to twenty. This is what the dean had in mind when he talked about “the licence to be radical.” Radical indeed it was, and in some quarters it is still considered to be such.

Dean Wright had other radical views too. He believed that there were too many engineering schools in existence in Canada. He was convinced that engineering schools should be large in order to get a faculty with a wide range of interest, to justify the heavy expenditure of equipment required for modern engineering teaching and to provide for sound graduate work. He has taken pride in the fact that the Faculty of Engineering at the University of Waterloo was the first of the new engineering schools to establish graduate courses in engineering. Contemplating the accomplishments of the faculty at the University of Waterloo, Doug Wright has said the thing to worry about most is arrogance. “The faculty may be too cock-sure,” he said.

It is certainly true that those in engineering at Waterloo (both faculty and students) are not plagued by any painful modesty. Almost to a man they will agree with Doug Wright that in its first decade engineering has dominated the University; that it has been
the factor which has attracted the most favourable attention to the University, and some will go much further. They will assert that in the formative years engineering subsidized the other faculties. Wright himself says that between 1960 and 1964 he got along with only two-thirds of his faculty requirements in order to free money for the development of the other faculties and he will point out, with a bit of a twinkle in his eye, that the engineering building was not the first but the third to be constructed on the campus.

Quite apart from the normal bickering about who did what for whom and when, one fact stands out sharply and clearly: the University of Waterloo has a great and dynamic engineering school.

When he came to Waterloo, Wright asked himself the question “How do you get respectability without aping those who are respectable?” Now he will say he feels that engineering at Waterloo provides the answer and that it was reached through the efforts of a group of men who, like himself, have been constantly analyzing themselves, examining their role in higher education, assessing their deficiencies and seeking to remedy them.

Up until 1959 engineering and science were considered as one faculty. In 1959 engineering was recognized in its own right and Doug Wright was appointed Acting Dean. He was also chairman of the Department of Civil Engineering. At this time T. L. Batke was chairman of the Department of Chemical Engineering, Ronald Bowman was chairman of the Department of Engineering Physics, Morley Lazier was acting chairman of Mechanical Engineering, and Electrical Engineering was yet to be developed. The next year B. R. Myers became the first chairman of Electrical Engineering and the first Director of the Computing Centre and in the same year Wright was confirmed as Dean. These were all strong-minded men with firm views about the profession to which they belonged. It has been characteristic of the faculty of engineering that it has always been acutely self-analytical. This tendency toward constant assessment of itself began in the earliest years and led to a major internal faculty disagreement.

In academic engineering circles the position of engineering
physics was and is controversial. As early as 1959 the controversy was taking shape at Waterloo and, up to the present, it is probably the faculty's only "great debate." Basil Myers, who came to the University in 1959 and left in 1962, was active in the debate and he has recorded his views on engineering physics in a didactic and disarrayed book called *North of the Border* which purports to contain accurate impressions of Canada. Dean Wright asserts that what Myers has to say about engineering physics is a reasonably accurate statement of the position of those who opposed it as a component of a faculty of engineering. As Myers points out, engineering physics was originally conceived to accommodate the small percentage of highly gifted students in engineering "to segregate this small, select group of students at the outset; and to feed them a carefully chosen enriched curriculum which only they were capable of swallowing and digesting." Myers contends that the idea "misfired." He points out that, somewhere along the way, instead of catering to the special needs of a carefully selected small group, engineering physics in such schools as that at the University of Toronto had a higher enrolment than any other department. He contends that the real effect of engineering physics was to downgrade the other departments of engineering rather than provide for the special needs of a small and superior group. He also casts considerable doubt upon the capacity of high school final year examinations to determine which students are eligible for more intensive training at the undergraduate level.

This was approximately the position of all those who opposed engineering physics at Waterloo including Dean Wright. When one puts Wright's determination to increase the academic content of all engineering training against the possibility that wherever engineering physics was found it stood in the way of such a programme, one can understand the dean's position. However, not everyone agreed, especially Professor Ronald Bowman who was the head of the engineering physics department. In academic circles, generally, one can find still a substantial number of academics who feel that engineering physics is successful in stretching students' minds at the undergraduate level and is indeed the
best preparation for graduate work in engineering. This view, interestingly enough, is held by many of the first graduating class in engineering from Waterloo and although they are properly proud of the achievements of the faculty of engineering several of them have expressed regrets that engineering physics is no longer offered.

The debate was resolved emphatically with the result that Professor Bowman left the University. Dean Wright's supporters were not in essence gunning for engineering physics. Rather, they wanted to clear the decks to set up their own intensified programme which is first described in the 1962/63 engineering calendar:

All engineering programmes are of modern scientific character and, instead of a separate programme in engineering physics, opportunity is provided for optional additional study in mathematics and science in each of the four main programmes . . . a wide variety of elective courses are available in engineering, science, mathematics, the humanities and social sciences, from which optional programmes may be developed . . . engineering physics programmes, in which studies in engineering are associated with advanced study in mathematics and pure science, are thus available, in effect, in every major field and supplant previous separate courses in engineering physics.

As shall be noted later, the physics department at the same time developed a programme in applied physics.

Although this was perhaps the most heated battle the faculty has experienced, the process of constant re-examination is a feature of the faculty of engineering. As early as 1963 a committee was set up, with Dr. A. N. Sherbourne as chairman, to examine the position of engineering at Waterloo and to make recommendations for its development up to 1970. The report of this committee is generally known on the campus as the "1970 Manifesto." The committee, which was composed of Professors Bodnar, Coulman, Fallis, Kesavan, Sherbourne, Soulis and Wright, investigated several areas of concern the first of which was the structuring and administration of the faculty. The recommendations relevant to this field were investigated in depth by Professor
B. G. Hutchinson who submitted a report in 1966 making recommendations regarding the function of the dean, the faculty council, the department heads and the operation of the faculty. Almost all the Hutchinson report recommendations have now been implemented.

In addition to the administrative problems the 1970 Manifesto looked into the problem of future enrolment and made a firm recommendation:

Present trends indicate that an enrolment of 2,000 qualified undergraduates by 1970 is realizable . . . there would be little further advantage in terms of skill and efficiency in any enrolment larger than 2,000 . . . of considerable importance, especially in view of the indicated goal of excellence, would be an improving average quality amongst the undergraduates.

The 1970 committee also stated firmly that in planning for the future physical needs of the faculty the faculty council “must itself assume the responsibility for deciding in considerable detail the nature of the extensions to the physical engineering plant which may be required from time to time.” In the current engineering expansion this has been put into effect.

Another preoccupation of the faculty is first mentioned by Dean Wright in an address entitled “The First Five Years of the Co-operative Engineering Programme at the University of Waterloo.” This speech was delivered in 1962 and the Dean said “It is not hard then to imagine a time when most professionals in fields subject to development through scientific investigation (i.e. engineering, science, management, medicine—but not law!) would take regular sabbatical leaves for intensive study. It is not hard to imagine either that professional licensing bodies may tend soon to demand such ‘refreshment’ of licensed members who wish to maintain their professional status in good standing.” The Dean and most of his colleagues are extremely conscious of the need for continuing education in professions such as engineering and Waterloo has taken more concrete steps in this direction than any other university up to this time.*

*See Chapter 10.
Another firmly held view in this faculty is that "A high standard of engineering education is not possible without a high level of research and professional activity." Over the years, the faculty has been relentless not only in its search for research funds and grants but in its insistence that faculty members thus engaged be freed from teaching duties to an extent commensurate with their research activities. As a result, a tremendous increase has been recorded. In 1962 the total research funds made available to the faculty of engineering were approximately $85,000; in 1966 the faculty had been awarded almost $680,000 for research of which almost $600,000 came either from The National Research Council or The Defence Research Board. So much activity has been generated in this field that for the past few years the faculty has produced, annually, a booklet of almost sixty pages entitled, "Research in Engineering," describing literally hundreds of research projects which are currently underway in engineering at the university.

Most of these projects are carried out by faculty members in the four core departments of engineering but since January, 1965, a fifth department has been added—The Department of Design.

The genesis of this department is a good example of how things often come about at the University of Waterloo. Within the faculty of engineering there was a small group who were primarily interested in design. Typically, they were restless and always looking for an opportunity to push their particular interest. About the same time, the Doon School of Fine Arts which had a loose association with the University was seeking some method of establishing more concrete identity and its board of governors (many of whom were associated with the University of Waterloo) were exploring fields which might be developed at Doon. Design was one of the areas considered. The Extension Department of the University was also involved and somehow these three groups came together and the upshot was that the field of design would be explored further by organizing a conference to bring in outstanding people from all over North America. From the point of view of attendance, the conference was a limited success but the
papers which emerged from it were of remarkably high calibre. In addition, several outstanding authorities in design who came to the University for the conference became interested in it, attracted by its dynamism, and indicated that it looked like a good place for establishing some kind of institute of design. Enthusiasm ran high and within a year it had taken shape. It became a department of the faculty of engineering and was authorized to offer a graduate programme leading to an M.A.Sc. degree in Environmental Design. Attached to the department is the Institute of Design, a financially independent and working institute which contributes to the development of formal academic programmes but does not act in a teaching capacity. The purpose of the Institute in terms of the student is that it provides an opportunity to work with a group of professional consultants and full-time institute staff members who have a wide range of backgrounds. Two of the first projects to be undertaken by the Institute were the interior design for two of the theme buildings for Expo '67.

"The study and development of the discipline of design as applied to environmental design" is the objective of the fifth department. The graduate programmes centre around three problem areas: "Hardware Orientation," "Sociological and Psychological Orientation" and "Methodology Process Orientation." While most of the first students have had degrees in engineering they come from other disciplines as well including architecture, communications and psychology. The department has carried on with its conference programme and has had even more successful conferences on the campus in 1965 and 1966. It is also active in the area of publications and publishes a journal called Design and Planning. Three of the department's members have co-operated in producing their first textbook under the title The Discipline of Design.*

Here then is the faculty of engineering at the University of Waterloo as it stands ten years after the University was first incorporated. Douglas Wright is no longer Dean; he has recently been

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*The first full-length book to be produced by the University of Waterloo Press.
appointed Chairman of the Committee on University Affairs for the Province of Ontario. The new Dean is A. N. Sherbourne, also a man of internationally recognized scholarship with a very wide range of interests extending much beyond professional engineering. The new Dean is the same Sherbourne who was the first Warden of the Student Village. Following the recommendations of the Hutchinson Report, the chairmanship of the various departments have changed several times. So too has the administrative structure. Beginning with the appointment of Dr. E. L. Holmes as Assistant to the Dean, the faculty now has an administrative staff which increasingly allows faculty members more time for teaching and research. The faculty began with an enrolment of 74; its 1966/67 enrolment is 1,825. In 1960 it enrolled its first graduate students—9 in all. Today there are 321 graduate students enrolled. The faculty was composed of 11 members in 1958 and today it totals 114. Because of the confusion of administration up until 1959/60 it is impossible to get a specific breakdown of operating costs for the faculty before that date but in 1959 the faculty operated on a budget of $117,000; the latest figures available (1965/66) show the faculty operated on a budget of $1 ¼ million dollars. When the present additions to the current building programme for engineering are completed a total of $8,150,000 will have been put into buildings for engineering.* In addition up to 1966 the University had spent over 2½ million dollars on equipment for the faculty.

The heavy capital costs involved in the development of engineering at Waterloo only in part result from its spectacular enrolment increase. Of more long-range significance is the philosophy of engineering under which the faculty operates and anticipates its growth. The approach which Dean Wright envisaged and which he and his colleagues have put into practice is highly complex and sophisticated. The wide range of options offered by the four core departments have to be supported by

*By 1970, the faculty of engineering estimates it will require a further ten million dollars worth of buildings.
heavy investment in facilities. The strong emphasis on research in this faculty makes equally heavy demands.

Actually the programmes in engineering which have developed or are anticipated at Waterloo have no Canadian equivalent. At Waterloo many of the engineering programmes properly relate to new areas of study which have been thrown up in our present technological civilization. A good example of this is the manufacturing science option now offered by the department of mechanical engineering, and perhaps even more obvious, the graduate programme offered by the same department in management and systems engineering.

Altogether, at the present time the faculty offers some twenty-one options at the undergraduate level. Long gone are the days when an engineering candidate only had to determine whether he would be a chemical, civil, electrical or mechanical engineer. Having made his basic decision, he now must decide what kind of civil engineer, mechanical engineer, etc. he wants to become.

The accelerated developments in science and technology in our age require this kind of specialization. The trend was recognized from the beginning at Waterloo and its engineering faculty attempts not only to keep up with these ever-increasing needs but to anticipate them. The approach is built into the Waterloo philosophy of engineering.

In its fantastic growth pattern, the co-operative feature of the engineering programme at Waterloo has had a significance which it is almost impossible to assess. It is accurate, however, to say that the success of co-operative education as it is practised at Waterloo has been greatly enhanced and has to a large extent depended upon the efficiency of the Co-Ordination Department. As we have seen, co-ordination which is essentially acting as the liaison between the academic community and the industrial community was originally operated (as was everything else in those days) on a desperately haphazard basis. Anyone who could help pitched in and did his share. We have seen that in the first few months George Dufault carried most of the burden. Major Tom
Findlay acted as the second co-ordinator through June to September in 1957 when he had to give up because he was suddenly stricken with leukaemia. During the summer two graduates of Waterloo College had been taken on to do some of the chores associated with co-ordination and one of them, Paul Wagner, stayed on until the beginning of 1958. It was at the end of 1957 that it was recognized that co-ordination was so important that those who were engaged in it could not be expected to perform any other duties and the first full-time co-ordinators were appointed in December of that year. They were David Bond and A. S. Barber who became Director of the Co-Ordination Department in 1958.

To Barber must go the credit for giving form and substance to the department, and, more importantly, for defining the function which it was to perform and making it work. He had a job on his hands which had no precedent in higher education in Canada. In the beginning he was as pressed for time as everyone else connected with the University in those days. It was merely a matter of trying to make sure that there would be enough places in industry for the students as they came to the end of their academic terms. In the beginning, according to Barber, there was only time to “knock on doors with a hard sell.” Both Barber and the small faculty had the task of creating academic acceptance and, moving farther along the course which Dean Wright had plotted, the embryonic Co-Ordination Department was expected to take this news to industry, convincing them that the scheme was of mutual benefit both to the student and to his employer and creating confidence in industry that the University knew what it was doing and could rely upon its contact (i.e. the Co-Ordination Department) when things went wrong.

It was not an easy job. In the first place the Association of Professional Engineers of Ontario resented the University of Waterloo because they did not feel they had been properly consulted before the University proceeded with this new departure in professional training. Ultimately, according to Barber, the association came around largely through the persuasiveness of
Dean Wright. Industry too was sceptical and Barber's job was to turn doubt into acceptance.

He started by calling on the companies which the Chairman of the Board of Governors, Ira Needles, or the President had contacted. Here he found, occasionally, a senior executive who had graduated from a co-operative programme in the United States. These were of great help. He also found other people who were responsive to the new idea and out of these contacts came the conclusion that a mechanism would have to be developed which would keep co-operating companies in contact with the campus on a continuing basis. The Industrial Advisory Council was the device finally created to accomplish this purpose. The participating companies from amongst themselves elected the council members who held regular meetings on campus where they sat down with the faculty and each group had an opportunity to share its problems with the other. The council has worked remarkably well and is still an important part of keeping the co-operative programme running smoothly. The University was particularly fortunate in having as the first Chairman of the I.A.C. Mr. Gordon Henderson who was one of the first Ontario industrialists to get a clear understanding of the full implications of co-operative education. He was invaluable in the early years and is now a member of the Board of Governors of the University where he continues to serve actively.

Still another problem, as the students continued to pour in and enrolment increased rapidly, was to find sufficient staff. Here, from first hand experience, Barber knew exactly what he required. He had to have professional engineers: they had to speak the language of business; they also had to be interested in young people and able to identify with the problems of the undergraduate engineer and, finally, they had to be able to move without inhibition in the academic atmosphere. Such men are not easy to find and the difficulty was further enhanced by the fact that many of those who would have made good co-ordinators were still sceptical about the feasibility of the entire programme. And of course, there was the budget: Barber did not have the funds to
make financially attractive offers to good prospects. Even those who came found difficulty in shifting to the academic atmosphere from industry where they had all previously worked. For many years, Barber struggled with this problem but in this regard at least his difficulties have diminished. Co-operative education is now understood in Canada and the role of the Co-ordinator is an acceptable professional career.

In a thriving enterprise one problem is solved only to reveal another. While the success of co-operative engineering has made it easier to acquire co-ordinators it has also brought a vast increase in numbers of students enrolled. Today, Bert Barber considers this his greatest worry. In the early days, with a few students it was possible to have a very close personal relationship with everyone in the programme. Despite the difficulties of the formative years it was easy then to have casual contacts with both students and faculty which in turn generated an atmosphere of warmth and confidence. In those days, a student’s co-ordinator was almost his father confessor. The Co-Ordination Department handled the full range of financial and personal problems which are to be found on the campus. As Bert Barber says, “When they didn’t know where else to go we invited them in.” Now it is not so easy. Procedures have had to be streamlined and, to some degree, the human element diminishes as procedures become more highly efficient; yet efficiency is not enough. As Karl E. Scott, President of Ford Motor Company of Canada, said to an industry-university conference at Waterloo in 1964, “Education’s obligation is to match the pace of onrushing technology. Education’s challenge is to initiate the discoveries. Let us all, however, not become so obsessed with the urgent need just to keep up with the race that we ignore the human qualities.” That conference was organized by the Co-Ordination Department and the Industrial Advisory Council. It has taken Scott’s warning to heart. Because of its unique relationship with students at Waterloo it has a better comprehension of what can happen if a man becomes trained so highly and so exclusively that he is little more than an extension of a machine.
The Co-Ordination Department under A. S. Barber has contributed tremendously to making the Waterloo version of co-operative education work. It has attracted the support of industry; it has provided jobs for the students during their work periods; it was one of the first groups, along with the faculty of engineering, to realize that a more efficient schedule was a unit of four months rather than the original three; it is proud of the fact that virtually none of the graduates of Waterloo have moved from Canada to take up work in any other country, largely because they have seen at first hand the opportunities which this nation has for professional engineers before graduation, and it has played an important role in persuading industry to integrate its training programmes more efficiently with the academic programmes offered at the University.

In terms of staff, facilities and organization, the Department of Co-Ordination has had to expand tremendously. It presently occupies a whole floor in the Arts Library. In addition to the Director, there is an Associate Director—G. L. White. With the successful development of co-operative programmes other than engineering, the functions of the department have been divided. For engineering, applied physics, and chemistry, there are co-ordinators under Assistant Director D. H. Copp; for the other programmes which include co-operative mathematics, psychology and physical and health education there are an additional six co-ordinators under Assistant Director R. D. Eaton. Still another co-ordinator looks after graduate placement and summer employment.

Last year the co-ordinators logged a total of over 190,000 miles keeping in contact with industry and students out on their work terms. But perhaps most significant of all, in the past year 22,000 (largely students but also many representatives from industry) calls were made on members of the department in their offices. The students still come to the Co-Ordination Department for almost any kind of help, counsel or just plain encouragement.
This is because, above all, Co-Ordination has fought for the recognition of human values. Every student who ever enrolled in a co-operative programme at the University of Waterloo, as far as Bert Barber is concerned is "one of his boys." He will fight for them, he will discipline them when necessary, he goes to their parties and shares in their fun and when the going gets rough he is with them all along the way. This spirit has been transmitted to every member of his department and it constitutes an important component to the unique experience which is co-operative education at the University of Waterloo.
Strictly speaking, the faculty of science is the oldest of the faculties of the University of Waterloo, inasmuch as it was the one which was first envisaged. As far as official recognition is concerned, up until the 1959 term the first students were enrolled in a faculty called Science and Engineering. The first dean to be appointed on a permanent basis (this does not include Dean Schaus who up until 1959 was not only the Dean of Waterloo College but also the dean of Engineering and Science of the Associate Faculties) was Bruce Kelley. If one wanted to split a hair, then, he could create a reasonable case for the comparative antiquity of science as a faculty at the University of Waterloo, but this argument would have to surmount one very difficult obstacle, namely, that all the students then enrolled were proceeding to an engineering degree. Of course, at that time they were not too sure that they would be able to get a degree at Waterloo, but they were all in the co-operative programme and not one of them would have said he was taking anything but engineering. On the other hand, however, many of the original members of faculty were teachers of science, not engineering. This confusion is easily resolved when one realizes that basic training in the pure sciences is one of the components of a course in engineering and for the first two years the faculty of science operated in a service capacity to engineering.

Of course, the professors of science, like all the other members of faculty at that time, were a vigorous and ambitious lot who never for a moment contemplated the possibility that they would long remain in a service position. The fact of the matter is that up
until 1959, although the students were enrolled in engineering, the majority of the faculty were in science. These included J. A. Cowan, chairman of the department of physics, and a staff comprised of R. M. Davies, H. Ellenton, A. R. LeFeuvre, J. D. Leslie, G. D. McPherson, G. F. Pearce, R. A. Snyder and E. R. Wallingford. In chemistry, Kelley was chairman of the department and he had under him R. M. Guest, D. Irish, D. Mackay, J. R. Mills. In addition, there was G. Power who was assistant professor of biology. Of a total faculty of twenty-three, fifteen were professors or lecturers in science. The point of these statistics is simply that from the beginning there was a strong foundation from which to build a faculty of science.

With his customary energy and dedication, Bruce Kelley, ably assisted by the other members of faculty, went to work on setting up science programmes. Facilities for chemistry were available in the Chemistry and Chemical Engineering Building and physics would be accommodated in the Mathematics and Physics Building which was nearing completion. The faculty was adequate for the work and in the fall of 1959 the faculty of science was ready to offer four courses: Honours Chemistry, Honours Chemistry and Physics, Honours Mathematics and Physics and a three-year General Science course. Twenty-four students were enrolled in these courses that fall. With typical optimism Kelley announced that the faculty planned to introduce graduate programmes in physics and chemistry the next year. And then Kelley died. The faculty immediately set up the Bruce Wyler Kelley Memorial Prizes in Chemistry and Biology as a tribute to the great pioneering work which he had done on behalf of the University, but these did little to compensate for the loss suffered by the science faculty.

Kelley, long over-burdened, had, before his sudden death, decided to relinquish the chairmanship of the department of chemistry. An appointment had been made. The new chairman was to be Dr. W. A. E. "Pete" McBryde, an associate professor of chemistry at the University of Toronto where he had taught for the past twelve years. McBryde arrived in July and by fall he
was named acting Dean of the Faculty of Science and had the satisfaction of seeing the enrolment of this young faculty treble from twenty-four the previous year to seventy-five. While Dean McBryde’s background was primarily academic, he too had first-hand experience in industry and had worked for two and a half years with the Welland Chemical Works, a Crown Corporation. He had also served throughout World War II in the Royal Canadian Navy and he was a firm believer in running a tight ship. Many universities in Canada have Arts and Science under a single Dean. At Waterloo, from the beginning, science was kept distinct and this was the way McBryde wanted it. He was a firm believer in avoiding a proliferation of departments and up until 1964 biology was associated with chemistry.

The dean, who is of Scottish ancestry and sometimes wears the kilt, is, like many of his countrymen, a man of firm and deeply-rooted convictions. One of them is that a scientist, whether he happens to be teaching or not, is primarily a scientist. Every year when he meets with the first-year students Dean McBryde makes this point. An excerpt from a speech he made to the students in 1965 well exemplifies his position: “The staff in a university is as much concerned with practising their subjects as with teaching them. I happen to be a chemist, and while it may be a personal more than a typical attitude, I still think of myself as a chemist first, and as a teacher or professor second.” This attitude has sometimes been construed by his colleagues in other disciplines as being narrow and limited, but this is not so. In the same speech the dean also said, talking about the nature of a university, “We are all trying to learn all we can about our chosen subject and how it relates to all other knowledge. In a sense we are all philosophers, searching after truth and wisdom.” The dean’s position is really quite simple: at university you learn to discipline your mind; you apply this discipline to a specific subject of your choice; and, finally, as you acquire the competence to achieve real wisdom in your chosen field you also acquire the capacity to relate your understanding to all other disciplines.
With these firmly held convictions, Dean McBryde has eschewed the spectacular and resisted the ephemeral temptations of many a passing academic fancy. In a university which, on occasion, can come very close to talking itself into almost anything, the tenacious McBryde has been both a valuable source of balance and ballast and at the same time a warm champion of individual human rights. McBryde is a pure but far from bloodless scientist. When he, on occasion, tells the students "I am sorry I cannot move among you and shake all your hands" that is exactly what he means. As a result the faculty of science at Waterloo has moved quietly but steadily, increasing its enrolment each year (over 1,000 in 1966), carefully developing its academic programmes and always insisting that it have adequate facilities before making a significant commitment. The dean has said "I happen to believe rather firmly that a great deal of science has its roots in the laboratory and should be learned there." Until the laboratory facilities satisfied the faculty's requirements they would consistently refuse to embark on new programmes.

Nevertheless, the growth of the faculty of science at Waterloo has been as exciting as any other facet of the university's development. The first graduates of the faculty (39 in all) were awarded their degrees in the June convocation of 1962. That same year the first extension of the co-operative system beyond engineering was announced—a co-operative course in applied physics. This course operates on the same schedule as the engineering courses—i.e. alternating terms of four months on campus and four months in industry. It is also a responsibility of the Co-ordination Department. In September, 1963, work began on the construction of 159,000 sq. ft. Chemistry and Biology Building. In use in the fall of 1964 (it was not officially opened until early spring, 1965) biology became a separate department with its own chairman. The first appointee was Dr. H. B. N. Hynes who came to Waterloo from the University of Liverpool. In the same year members of the faculty became involved in the first inter-departmental research institute to be set up at the university. This was the Waterloo Resources Research Institute which is described later.
In 1965 the faculty added its fourth department—earth sciences. At first glance this department might be equated with the familiar geology departments which are to be found in most multifaculty universities. Certainly if one accepts the definition that "all of the face of the earth is within the province of the geologist" and that a geologist is "a person who is fundamentally involved in solving the problems of the earth," then the term seems applicable. It was deliberately rejected at Waterloo because it was felt that the traditional association of the word geology was a bit too limited and also because, as this department was envisaged, it would more and more "merge indiscernibly into such sister sciences as biology, physics, chemistry, astronomy, agriculture and geography." In short, geology in its full meaning is really an interdisciplinary subject. At this point the new department has barely begun and is far from having achieved its ultimate form. It is still a small department and Dr. P. F. Karrow is the acting chairman. In essence, the department of earth sciences is a typical University of Waterloo project. It is a carefully considered and well planned attempt to meet a contemporary need within a strictly academic context.

The other three departments are now firmly established. Physics offers three honours courses. The first is designed for the student who plans to do graduate work in physics, and the second, called "B option" is for those who anticipate a career as a high school teacher. In addition there is the co-operative applied physics course already mentioned, and, in conjunction with mathematics, a physics and mathematics honours course is offered.

The undergraduate enrolment in physics majors has risen steadily and is now an impressive seventy-nine. In addition, there are forty-five graduate students in this department. At its present rate of acceleration it shows every indication of becoming one of the largest departments of physics in Canada. It is active in research projects, of course, and to date members of the department have published 271 papers. Solid state physics is particularly emphasized at Waterloo, again an example of how the University
tends to relate academic capacity to contemporary needs or, as a member of the department has put it, "A great deal of modern solid state physics is strongly motivated by practical considerations. The areas of research which are most actively pursued are those which have practical overtones."

In chemistry there are three honours options: honours chemistry, honours chemistry and physics, and honours chemistry and biology.

In the first year of the operation of the honours course 14 students enrolled; today there are 135. Similarly the number of graduate students in chemistry has risen to a present total of 53. Graduate studies in this department began in 1962, greatly strengthened by the appointment of W. F. Forbes in that year. Forbes is an internationally known chemist who, in addition to his full-time appointment at Waterloo, commutes weekly to the University of Rochester where he has been visiting professor since 1964. In the fall of 1966 the co-operative chemistry course was inaugurated. At the honours level, it is distinct from the conventional honours chemistry in that it is directed specifically to the more practical applications of chemistry. The original enrolment in this course was a resounding 71. The present chairman of the chemistry department is Dr. H. G. McLeod. Appointed in 1965, he came to Waterloo in 1964 after several successful years in industry—E. I. Dupont. It is interesting how consistently we find the academic-industry combination in the senior academics of the university.

Biology, besides collaborating in the chemistry and biology honours course, also offers a straight honours biology course and an honours course in biology and psychology. The latter option is rather unique, not only in that it is a combination of disciplines from two faculties, but also because it brings study and research into human behaviour into a disciplinary orbit which has up to this time generally been applied to animal behaviour. The course is designed primarily to train people for research activities.
Besides the honours courses, the faculty offers a three-year general course and a four-year general course in either of which one can choose a major from any of the four departments. Regardless of which course the student ultimately selects, all students in science take a common first year.

In quick review, then, the faculty which Bruce Kelley started and which Dean McBryde and his colleagues brought to its present position looks something like this: the physics department in 1959 had a faculty of 13 which today is 28; its operating budget has risen from $120,000 to $347,000; it had a research grant of $4,500 in 1959 and in the current year has research grants of $159,000. In 1959 chemistry had 8 members of faculty and today has 22; in the same period its operating budget has risen from $85,000 to $375,000; it had research grants of $12,000 in 1960 (none before that) and today has research grants of over $167,000. In biology, in 1959, Dr. H. R. N. Eydt joined Dr. Power as the second member of the biology department (Eydt is now Warden of the Student Village); today there are 15 members of faculty in this department; its operating budget has risen from $14,000 to $203,000 in this period; in 1959 it had no research grants (indeed, in 1960 it only had $900), today research projects amounting to $117,000 are under way in this department. Earth sciences, of course, is just nicely under way, but it has a faculty of five and an operating budget of over $60,000.

Like engineering, the faculty of science has had an almost continuous programme of self-assessment. Typically, it has developed its own techniques for determining where it stands, where it should go and what it needs, but it too seems to be dedicated to self-improvement. For several years now the faculty council has had a forward-planning committee which concerns itself with everything from how the faculty should be administered, what facilities it will require, to projections of ideal growth patterns. Like engineering, science has largely determined the shape of its own identity. The dean is proud of the way in which the tricky area of administration within the faculty has been handled. In his own words he describes it in this way: “This
faculty within this university has pioneered with the introduction of sub-deans and with the introduction of departmental administrative assistants. We have pioneered in the development of an administrative committee as a device for consulting between deans and departments and we are this year approaching for the first time communal budgeting for the faculty so that the budgeting procedures within the faculty should be known throughout the departments, and everything is dealt with on the table.”

The sub-deans referred to are Professor D. Parkinson, Associate Dean—Undergraduate Studies, and Professor F. W. Boswell, Associate Dean—Budgets and Resources. When the University decided to provide deans of faculty with administrative assistants the first appointee for science was Mr. Ross McIntyre. The faculty decided to change and elaborate this role and Mr. McIntyre is now executive secretary to the faculty. Science has also developed an appointments committee whose primary function is to broaden the base on which promotions within the faculty are made so that department heads and senior members of departments, as well as the dean, are involved in reviewing the work of each individual faculty member.

It was largely out of the work of the forward planning committee that the earth sciences department was developed, that the four-year general course in science was created, and that a second co-operative course came into existence within the faculty—co-operative applied chemistry.

The forward-planning committee is also constantly engaged in assessing the physical needs of the faculty. Assuming that the department of physics will take over the entire existing mathematics and physics building when the new mathematics and computer science building is completed, at that time the faculty of science will be occupying 358,000 sq. ft. built at a cost of approximately $7,250,000. Impressive—indeed astonishing—as this is, it is pallid compared to what the faculty estimates it will require within the next three to four years, almost 600,000 more sq. ft. at a cost of $18,000,000!
And this is in spite of the fact that the University of Waterloo has just recently set up a separate faculty of mathematics. Next year an estimated three-eighths of the present enrolment in the faculty of science will come under the aegis of the new faculty of mathematics. The dean has pointed out that there will continue to be a service teaching function for those in the faculty of mathematics in much the same proportions as they presently exist. On the other side, new developments are now under consideration for the faculty of science which indicate that its spectacular projections for growth are valid.
THE FACULTY OF ARTS

While every faculty of the University of Waterloo has its own distinct and distinctive story the evolution of the faculty of arts perhaps needs closer scrutiny than any other academic development. There have been so many timely and fortunate episodes in the University’s history that it could be open to the suspicion of being just plain lucky. This does not apply to the faculty of arts. Therefore it is important to see what Waterloo can do in a situation which, in essence, is just straight hard slugging all the way.

First, it is important to remember that up to 1960 the University did not contemplate having to establish its own faculty of arts in the immediate future. Remember that the President hoped right up until the last moment that a compromise solution could be worked out with the Evangelical Lutheran Seminary and that, of course, would have meant proceeding as originally conceived, i.e. with the basic arts courses provided during the formative years by the staff of Waterloo College. As we have seen, this did not happen. In a matter of only a few months, starting from almost nothing except (and this is no inconsiderable exception) a strong mathematics department, a faculty had to be put together which would at least provide the nucleus for eventual development into a full-fledged faculty of arts. This time there was no one to come along with an engaging “special feature” which might provide the impetus to carry the faculty through its rugged formative years. This time the University had to go into the academic marketplace and seek faculty with virtually nothing (some would say with liabilities) to attract arts professors. While
the University had begun to get some attention it was all focused on co-operative engineering. The well-known (though not by any means entirely justifiable) antipathy between the artsman and engineer definitely still exists in Canadian academia and it did not work to Waterloo’s advantage in 1960. Indeed it was aggravated. The vague but rather disturbing aura of a technological institute (a spill-over from the days of the first plan) was still associated with the University of Waterloo in many of the traditional Canadian universities. Pre-engineering was still offered at Waterloo in 1960* and this led to the erroneous impression that the University as a whole accepted students with qualifications considerably under the average for Ontario universities. One of the earliest faculty members to come to Waterloo and who is still there was told bluntly by the head of his department at the university where he was teaching that, in going to Waterloo, he was going into an “academic slum.” None of these factors could possibly be considered assets when it came to recruiting able men for a faculty of arts.

In addition, there was considerable doubt in many minds that the University really intended ever fully to develop arts despite the protestations of President Hagey that this was indeed the goal. Altogether in attempting to form a faculty of arts in a remarkably short period of time the University stood at the foot of a steep slope and this time there was no tow-rope.

Here was a situation which had really only one attractive element: a clear field in which one might build one’s ideal arts faculty and this, in turn, implies that only those who had already formed strong views as to what constituted this ideal would be tempted to Waterloo. This was the way it looked to the first acting dean of the faculty. To Dr. W. Keith Thomas who had been teaching at Mount Allison University and was intending to move to the Royal Military College at Kingston in the fall of 1960 it “seemed an opportunity of a lifetime.” Thomas was called by telephone and asked to consider coming to the University. He came up to Waterloo to look around at Easter, 1960.

*It was finally discontinued in 1964.
President once more made it quite clear that the University had always expected it eventually would have to develop its own faculty of arts inasmuch as what it wanted was much too elaborate and costly for Waterloo College ultimately to finance. Thomas was convinced and intrigued; sought a release from his commitment to R.M.C.; got it; and arrived in Waterloo eager to get down to the business of developing the first arts curriculum. With him came Dr. Paul G. Cornell who, like Thomas, had his doctorate from Toronto, had taught at Mount Allison and was appointed first professor of history and chairman of the department at Waterloo.

Time for recruiting further faculty had almost run out but a sufficient number of qualified men were found who, along with those who had transferred from Waterloo College to the University of Waterloo, made up the nucleus of the faculty. Mathematics was dominant; twelve of the twenty-four members listed as the academic staff of the faculty of arts for its first year of operation, 1960/61, were mathematicians. Dr. Bexton from Waterloo College, head of the department of Psychology, had W. G. Scott (who also doubled in some administrative chores) as the second member of his department. Dr. J. W. Dyck, also from the College, was head of the German and Russian department with Dr. Edmund Heier as Assistant Professor. Dr. J. C. McKegney from Waterloo College was the sole representative in the field of romance languages—associate professor of French and Spanish. Dr. F. C. Miller, again from the College, was the Economics department. Cornell did History alone. In addition to Dr. A. I. Dust who was already on hand teaching English courses for the engineering students, Thomas got J. S. Stone as a second member of the English department and Dr. T. H. Qualter was appointed as lecturer in Political Science. This then was the faculty of arts as it prepared for its first year of operation. Only four departments were officially set up—Mathematics, History, German and Russian, and English.

All one has to do is to look at these twenty-four faculty members and it becomes clear that the untrammeled opportunity
which Thomas had thought existed was not there. Mathematics under the driving leadership of Dr. Ralph Stanton had already staked out a sizeable claim. Undoubtedly those who came to the University from the College also felt that they had a right to be heard and, perhaps, even lead in the formation of arts. Inevitably, turbulence could be expected and it was not long until the frail craft was caught in a storm.

The issue was the curriculum and an arts curriculum is infinitely more complex than anything we have contemplated up to this point. In what is generally known as the field of arts at a university there is, or can be, a wide proliferation of subjects in the humanities and social sciences. While engineering and science could organize their curricula within a framework of somewhere between three and five departments, a full-fledged faculty of arts could imply somewhere between fifteen and twenty. In addition, traditionally an arts faculty operates at two levels—the general degree programme and the honours degree programme. The number of possible combinations for honours work (e.g. English and History, English and Philosophy, English and French, etc.) becomes sometimes bewildering. Add to this the wide choice available for requirements for any given degree and it is not difficult to understand why a curriculum debate had to emerge. At Waterloo it emerged with a bang. Working under intense pressure, with a minimum of staff and a division of opinion, it was not surprising that by September the arts group had only been able to agree on a curriculum for the first year and that was a compromise.

There is little hint of this in the slim but not unimpressive green brochure which was produced to introduce the faculty of arts at the University of Waterloo. Examined closely, the first calendar for arts commits itself to very little but it comes down hard on the side of what seemed to be the right things. A paragraph is worth quoting:

The breadth of cultural awareness will be afforded in at least three ways related to the curriculum. The student will be given the opportunity of exploring those humanistic subjects which have
transmitted the inherited values and experience of our western civilization ever since its beginning. He will at the same time be exposed to analyses of our society as it exists at present, and he will also be made aware of the basic principles and methods of the various sciences.

The faculty attempted to make the best of the thinness of its offerings. It pointed out that it had an honours course in Russian which would be of special value at the present time. Taking advantage of the well-known fact that the University was located in a predominantly German community the calendar said “It is of course only appropriate that the University of Waterloo should offer a rich honours programme in the German language and German culture.” Mathematics, of course, was singled out for special mention as “one of the largest departments in the University.” And Thomas and Cornell who had teamed together to put up a strong battle for the development of the humanities got their oar in too. “As always, a prolonged and profound study of either English or History is one of the best ways to become genuinely educated, by acquiring not only a keenly and constructively critical mind but also an intimate knowledge of the best that has been taught and said in the world.”

Taken in the context of what had actually happened during the summer, these quotations from the calendar say much more than the prospective student could possibly imagine. They reveal battle lines drawn and indicate that even though a compromise had been effected in order to get a first-year curriculum ready for the first students there were going to be many stormy sessions as the faculty of arts struggled to achieve its particular identity.

Fifty-four students came that first fall and Thomas, looking back at the group, sees them in a warm and happy light. “They came with adventure and they got it and prospered” is the way he summarizes the experience of these students. And they brought something else to the campus. For the first time undergraduate girls could be seen picking their way through the construction sites which were at every turn. For three long dull years the classrooms of Waterloo had been devoid of the grace and,
indeed, the stimulation which only the female of the species can bring to any campus. Regardless of what engineers thought about arts, engineering undergraduates had no complaints about arts students, female gender.*

But they were wanderers. Except for mathematics, the faculty of arts had no home or as Keith Thomas puts it “we squatted.” This did not make for a happy environment either. It was remembered, especially by the faculty members who had been at Waterloo College, that both a library and an arts building had been originally high on the list of construction priorities. Even though success deserves and has to be supported, it was still a bit galling to the original arts group to have to squat on the sidelines and wait until dollars became available to build them a home of their own. The library was a particularly acute irritant. For most of the disciplines in arts the library is the equivalent of the scientist’s or engineer’s laboratory. At this point (1961) the University had built and was continuing to build large, costly and up-to-date laboratory facilities. The total library for the entire University was housed in one large room on the third floor of the mathematics and physics building. From an artsman’s point of view this was completely off balance. He felt that either he was being relegated to a service role or that he was expected to achieve excellence without the necessary facilities required by his discipline. He could not be happy with either alternative.

However, within the limitations of available money and space the faculty asserted itself strongly. Within a year the library holdings of the arts faculty had squeezed out all the other material in that third-floor room. At the time it was not a very rewarding triumph but its ultimate effect was that the concept of library services at Waterloo changed and led to considerations which eventually led to the recognition that the faculty of arts needed a large library of its own. The library building which is the present focal point for the existing campus is, properly speaking, the Arts

*The only difficulty was that there were not nearly enough of them. In 1961/62 the total University enrolment was 1172 of which only 62 were girls! In that period, Waterloo held the distinction of being the best husband-hunting campus in Canada.
Library and there are plans for other kinds of libraries for the future. This is a practice which is found to be most efficient in almost all large North American universities and, although the waiting period was painful, it is just as well that the University of Waterloo accepted this method of handling books before it embarked upon any library construction.

However, in the strain and struggle of that first year it was not easy to envisage a very optimistic future for the struggling faculty. The acting dean was quite frankly exhausted and exasperated and so were most of his colleagues. In essence a situation had developed where strong-willed men with opposing views were pitted against each other. Moreover, most of these men were primarily scholars who, more than anything else, wanted to get on with their proper pursuits and yet how could they as long as an impasse existed, as long as no final decisions had been reached about either a philosophy of arts for the University and the curriculum which would result from it or, indeed, as long as arts had virtually no physical facilities for development? Thomas made the first move and resigned as acting dean to continue as chairman of the department of English. Now the onus was on the University, which was very much aware of the difficult situation in arts, to find someone to act as dean who could help resolve the conflict. Obviously, none of the existing members of the faculty were suitable choices because all of them had become too committed to one side or another.

The answer was found only a few miles away from the Twin Cities in the person of Norman H. High, a Ph.D. in sociology from Cornell University and at that time a member of the faculty of the then Ontario Agricultural College at Guelph from which High himself had graduated. In addition to not having been involved in the first-year struggle, he represented a discipline which at that time did not have a department in faculty of arts at Waterloo; but his major advantages were in his own person and personality. Although he is a Mennonite, Norman High exemplifies “gentle persuasion” as strongly as any Quaker. One has only to meet and talk with him to realize that here indeed is a man of goodwill. At this point in the development of the faculty, no attribute was
more greatly needed than the benign integrity which Norman High personifies. He admits he came into what seemed to him to be almost “a vicious” atmosphere. He did not have to struggle within himself to stay away from it because he had no interest in becoming involved in it. He certainly had not come to Waterloo to pour oil on troubled waters but he quickly realized that, in effect, this would have to be his major function.

Actually High came to the University because, like almost everyone else in those days, he was intrigued by its unique qualities, impressed by its potential and, as he puts it “the president was very persuasive.” Also High knew and had some first-hand experience with co-operative education. He believed it could be applied to arts and he still does although, up to this time, the faculty has moved very slowly in this direction. Another factor which attracted him to Waterloo was that by this time it was known that his own faith—Mennonite—was going to establish its first college on a Canadian campus at Waterloo. He wanted to be on hand when this (for his people) unique experiment was under way and he hoped to be of service when the college would be established. And finally, he admits, with the delightful ingenuousness which is a mark of his personality, that he was intrigued by the thought of a graduate in the science of agriculture becoming a dean of arts. High was appointed acting dean for the 1961/62 term and confirmed in the appointment in the fall of 1962. During his tenure he has seen the faculty develop into what the president had assured him it would—a full-fledged faculty in its own right.

When High came to the University there were 209 students enrolled in arts and of these 76 were at St. Jerome’s and 8 at Renison College. That same year there were 1172 students on campus and 795 of them were in engineering. In the 1966/67 term the total enrolment of the University was approximately 5700 students of which a little over 2,000 were enrolled in the faculty of arts. In 1961/62 there were 40 members of faculty and in 1966/67, 204. In these figures there is one factor which applied in the early years but will never be realized again. As in engineering,
so too in arts in the first two or three years the relationship between faculty and students was very close. In the first year of its operation the teaching ratio was one professor to two students. Today the ratio (still very good in comparison to that of many Canadian universities) is one to ten.

It must be admitted, however, that in the early years the arts students did not achieve the same kind of sense of identity which the early engineers experienced. Unlike the engineers who were a small band of pioneers, the tiny arts group felt themselves almost overpowered by the vast numbers of engineers who by this time almost completely dominated the campus. In addition, they were split into smaller groups. Only the mathematics department had a fairly large enrolment (again comparatively speaking). The others had, at best, maybe three or four students per department. This was further aggravated by the existence of a federated and an affiliated college. Wherever the college system exists there is a tendency for students to identify with the college in which they are registered rather than with the University faculty. Today, this is not so apparent but it did not make for a strong feeling of unity amongst the arts students in the first years.

The acquisition of physical quarters of its own, a place to which students and faculty could point and say "that is the arts building," was of tremendous help to the struggling faculty working to achieve identity. As we have seen, the first arts building was occupied in 1962 and although it was small—56,000 square feet—it did bring arts students into daily contact with each other and, although there is still a way to go, the arts students at the University of Waterloo no longer go around looking like or feeling like poor relations. At the present time the complex of buildings which service the faculty represents a capital investment of $3,400,000 and this will be doubled by 1968 even though, by that time, mathematics will be in full operation as a separate faculty.

All this is definite evidence of the development of arts at the University of Waterloo. Despite its troubles, a faculty has most certainly emerged and Norman High takes an understandable pleasure in this achievement but, most modestly, he does not
claim any undue credit for it. He feels that the development of the faculty is the work of the members themselves. But this could not have occurred if the battles of the first year had been prolonged. Dean High, who has just recently announced his retirement from the post, has been indeed a great peace-maker. This is a role which we do not come upon very often in the story of Waterloo. In most instances development has occurred because of intelligent but implacable aggressiveness. This is true of the faculty of arts too but, before it could develop, the aggression which had turned inward had to be reversed so that members of faculty could get on with the job of building their departments. The fact that this has occurred is a tribute to the gentle persuasion of Norman High.

In the development of the various departments of the faculty one can see how the spirit of innovation and determination which characterizes Waterloo’s growth began to manifest itself in the faculty of arts. One of the original departments was German and Russian under the chairmanship of Dr. J. W. Dyck and assisted by Dr. E. Heier. Both of these men are typical Waterloo originals and they quickly began building a department which, in most Ontario universities, is not usually very large or extensive. Amongst other things, they were one of the first arts departments to produce a graduate programme and in 1961 there were twelve students enrolled in the M.A. course in German. In 1964/65 the first Ph.D. programme in German was originated. At the present time there are eighteen honours students in German and twenty-two graduate students plus nineteen honours students in Russian and eleven graduate students. The faculty has grown from two to ten plus a visiting professorship which was started in 1965. To date members of the department have produced thirty-one scholarly reviews, fifty-two scholarly articles and thirty-two books.

Once he was free from the problems of acting dean, Dr. Keith Thomas settled into the task of building the English department which, during his tenure, increased from its original three members to fifteen. In the fall of 1965 Dr. Warren U. Ober became chairman of the English department and since that time it has grown
from fifteen to twenty-four members of faculty. The present members of the department have published some ten books and more than forty scholarly articles. Unlike the German and Russian department, the English department has been deliberately slow in developing graduate studies. The library requirements for work in English at the graduate level are tremendous and until it was felt that the arts library had sufficient material for advanced study the department firmly refused to embark upon graduate programmes. It will not be until the fall of 1967 that programmes leading to an M.A. and an M.Phil. degree in English will be offered by this department. In the meantime it is busily planning a full-fledged programme in drama and is also looking forward to its first visiting professor who will be Dr. Earle Birney who is now generally considered the dean of Canadian poets.

The department of Sociology which Norman High formed in 1961 along with Professor W. G. Scott and Father W. I. Brown of St. Jerome’s has also shown solid growth. From its original three the faculty has grown to sixteen and in 1965/66 became the department of sociology and anthropology under the chairmanship of H. J. Fallding. In 1966 it accepted graduate students for the first time. The members of this department form still another group at Waterloo who believe that “the best teaching is always given by scholars active in research.” To encourage such activity it has set up a social sciences research laboratory which works very closely with the computing centre of the University.

Another of the early departments of the faculty was that of Romance Languages. From the beginning it had been the intention that when sufficient students were enrolled this department would split into a department of French and a department of Spanish and Italian. Up until 1963 it was a single department under the acting chairmanship of Dr. James C. McKegney who taught all the French and Spanish courses with Italian being handled by Father M. I. Kieffer of St. Jerome’s. In 1961, Dr. H. S. Robertson and Mrs. Dorothea Walter* were brought in to teach French and Mr. Raymond Skyrme for Spanish. In 1963 the planned division

*Mrs. Walter was also the first Dean of Women.
was accomplished with Dr. McKegney being appointed chairman of Spanish and Dr. Frances K. Montgomery chairman of French. At the present time the French department has four members of faculty plus four from St. Jerome's. Since 1963 its members have published three books, twenty-six scholarly articles and completed six research projects.

The Department of Spanish and Italian, continuing under Dr. McKegney, has not had an easy row to hoe. In the present academic context, these languages (especially Spanish) tend only to develop strong significance when associated with some form of Latin American studies. Dr. McKegney recognized this and as early as 1961 attempted to establish an inter-disciplinary programme in Latin American studies. Thus far it has not received administrative support and in the meantime the University of Toronto has set up the first such Canadian programme. Nevertheless this department presently offers a full programme in Spanish with forty-five students in the beginning course, thirty-five in the intermediate course, seventeen in the second year and (since Spanish only recently seems to have caught hold) only three in the third year and three in the fourth. Italian is still offered by Father Kieffer who is now located in Resurrection College at the other end of the Twin Cities. At the present time the faculty comprises four members and anticipates fuller development in 1967. Dr. McKegney was honoured by being requested to be visiting professor at Queen Mary College, University of London, in 1965/66.

History, one of the original four departments in the faculty, has shown steady and consistent growth under Professor P. G. Cornell who, in addition to his responsibility in history has at various times acted as chairman for the departments of political science, economics, and geography. In the first year Fathers J. L. Arnold and J. S. O'Connor from St. Jerome's were the only other faculty members in history. The following year, however, three additional members were added: Dr. K. A. MacKirdy, Professor A. W. Rees and Dr. R. E. Wynne. All of these continue to make a significant contribution to the department and to the University.
The following year the faculty grew to seven, eight the next year, nine the next, eleven the next, and presently consists of twelve members. It currently offers thirty-three courses. It has made imperial history its specialty and Professors Cornell, MacKirdy, Patterson, Craton, Sandler and Johnston are all involved in the development of this unique feature. Since 1963 the department has sponsored the United Nations seminars for high school students; Ontario History, the quarterly journal of the Ontario Historical Society has been edited by Drs. Cornell and MacKirdy since 1962. Dr. R. E. Wynne was editor of The Bulletin of the Ontario Genealogical Society from 1962 to 1966. To date five books have been published by members of the department, approximately thirty articles and innumerable reviews.

In the first year, while not a recognized department, psychology courses were offered by Dr. Harold Bexton and in 1961 Dr. M. Vogel-Sprott joined the department and in the following year Professor R. K. Banks was added. Dr. Bexton resigned in 1962 and was succeeded by Dr. R. H. Walters. Dr. Walters is a perfect example of what Dean High means when he says that the development of the faculty of arts owes much to the aggressiveness and stamina of its members. Like Stanton, Thomas, Cornell and others whom we shall presently meet, Walters came to the University full of ideas and energy. He promptly set up a graduate programme with eight students enrolled and acquired seven new faculty members. Since that time, the department’s growth has been truly spectacular. It quickly outgrew the narrow confines offered in the first arts building and separate accommodation not far from the campus had to be rented* in order to accommodate the activities of the Psychology department. Amongst other things it is the only Psychology department in Canada which maintains a primate colony for the study of infra-human behaviour. In his early days at Waterloo, Walters, not a man to wait for facilities, kept a good number of animals used for experimental purposes in the back yard of the Albert Street house which led to some

*First, a house on Albert Street, then most of a large commercial building on Columbia Street.
interesting repercussions in the neighbourhood! The end result, of course, was that the University recognized a need for further facilities for the research activities of the department. The department prides itself on the fact that, unlike most Psychology departments in Canada, it provides graduate training in a broad spectrum of areas including specialization in psycho-biology, learning, perception, social, developmental and clinical fields. The result is that presently it is the most active department in the University in the realm of graduate work. Current year research grants to members of the faculty total over $275,000. There are twenty-six faculty members.

Of all the disciplines originally represented in 1960 the slowest to develop up to now is the department of Economics. Although it presently offers fourteen courses and serves 559 students it is still struggling to establish a basic programme. It has never had a permanent chairman or continuity of faculty. The oldest member in the department in terms of service is Professor W. R. Needham who was appointed in 1965. The present acting chairman is Dr. J. S. Minas who is determined that economics will be established on a firm foundation at Waterloo and Dr. Minas is a man who inevitably achieves what he sets out to do.

Political Science was also represented in the first year in the person of Dr. T. H. Qualter who was made acting chairman in 1964, confirmed as chairman in 1965 and continues in this role. Although the department developed slowly and cautiously it was ready to offer a four-year honours programme by the fall of 1963. It began work in the field of graduate studies with an M.A. programme introduced in 1966. Again, it exemplifies Waterloo's sensitivity to current needs in its unique four-year honours programme combining French and Political Science—certainly a very timely combination at this period in Canadian history when the great biculturalism debate is in full swing—first offered in the fall of 1965. At the present time the department has seven full-time members and another from St. Jerome's as well as joint and adjunct appointments. Both through Dr. Qualter's leadership and the character of the members of the department, political science
at Waterloo is taking on, as might be expected, a recognizably activist colouring. Traditionally, political science has tended to eschew practical politics and their implications in favour of a more remote, didactic and speculative approach. At Waterloo, students in political science are strongly encouraged to see this discipline as directly relevant to the contemporary society in which they live and their response has been enthusiastic. To date, two books have been produced by members of the department and eight major scholarly articles.

All the other current departments in the faculty of arts were established in 1961.

While the University of Waterloo has proceeded vigorously on its somewhat iconoclastic way, it certainly has never questioned that the study of Classics is an essential and fundamental component of an arts faculty. The first appointment in Classics was Dr. Paul Keresztes who is still in the department. At the present time there are four University members of the faculty and, as one would expect in this area, a strong representation from St. Jerome’s—another four faculty members. The department has always been under the acting chairmanship of Dr. Norman High. In 1961 it offered three courses; today it offers twenty.

Still another “traditional” department was added to the faculty in 1961—Philosophy. Of course St. Jerome’s had, and still has, its own strong department in this discipline. From the beginning the two have worked together harmoniously and it is worth noting that the University department has been given ecclesiastical permission to offer undergraduate philosophy courses to students registered in St. Jerome’s. In 1961, Dr. R. J. C. Burgener was appointed associate professor and chairman of the department. The myth of the aloof, remote, other-worldly philosopher certainly is confounded by Burgener (and indeed most of his colleagues). With intense drive, during his years as chairman of the department Burgener clearly established Philosophy as one of the core disciplines in the faculty of arts. Dr. J. S. Minas joined the department in 1964 and became chairman in 1965. Only a year after its formation, the department was authorized to initiate
M.A. and Ph.D. programmes and at the present time has twenty-six students enrolled, ten of whom are candidates for the Ph.D. The department has attracted a good deal of international attention both through its active programme of Colloquia and members of the faculty. Professor Zigmunt Adamczewski (who joined the department in 1962) served as visiting professor of philosophy at the University of Indiana for the winter term of 1965/66 and Professor Jan Narveson (who came to the University in 1963) was visiting professor of philosophy at Johns Hopkins University in 1966/67. On the other hand, the department has had a visiting professor since 1965. In that year it was Professor Rolf George who subsequently joined the permanent staff and this year it is Professor Ronald Butler who has also decided to remain at Waterloo. Nine books have been published by members of the department and some ninety-three scholarly articles and significant reviews. Nineteen major research projects are currently under way and this year fifty-five courses are being offered by the department.

The first geographer to come to the University of Waterloo was Professor John T. Horton in 1961. The following year three more faculty members were appointed and Dr. Ralph R. Krueger was made chairman of the department. This group immediately established a four-year honours geography programme. In 1964 it introduced a Master’s programme and in 1966 enrolled its first Ph.D. candidates. Under Krueger almost from the beginning the department specialized in land use studies, urban problems and regional planning and resource development. This resulted in planners being added to the faculty as well as geographers and in 1966 the department was renamed the department of Geography and Planning. Its honours programme in urban and regional planning is the only undergraduate planning course offered in Canada. Again, it will be noted that, without disturbing a solid academic foundation, the department of Geography like so many others at the University is oriented to contemporary society. This undoubtedly has been a factor in its rapid growth which has earned for it strong support within the University. In 1966 it
moved into a new building specifically designed to meet its needs which include special laboratories for geomorphology, climatology, air photo interpretation, cartography and planning studio work. At the present time there are one hundred and forty students enrolled in the undergraduate honours programmes and twenty-six graduate students. The present faculty consists of eleven full-time members.

*The Department—now the Faculty—of Mathematics*

The story of the development of mathematics at the University of Waterloo is closely entwined with the narrative of the development of the University itself. Of all the academic enterprises in which the University has been or is concerned mathematics is unique in that it started in a strong position, has kept its growth at least consistent with the University’s total growth, and did not have the benefit (or conversely, the gamble) of the co-operative feature in its formative period.

When the faculty of arts was established in 1960 thirty-nine of the fifty-four students enrolled in arts were majoring in mathematics. From this strong beginning it has continued, until its recent separation from arts, as by far the largest department. In 1966 it had 590 students enrolled in regular honours programmes and 450 in the co-operative programme. In 1960 included in the twelve members of the department were K. D. Fryer, now associate dean of the faculty of mathematics, J. W. Graham, now director of the computing centre and D. A. Sprott, the first dean of the faculty of mathematics. With very few exceptions all the original members of the department are still there. At the present time there are fifty-three full-time faculty members in mathematics and four visiting professors in the current year. Mathematics was the first department to initiate visiting professorships and has had the advantage of playing host to an impressive list of distinguished scholars from various parts of the world. Of particular interest is the fact that a large proportion of the junior members of the faculty of mathematics have done their graduate work at Waterloo.
In other words, the department of mathematics has complete faith in its own product.

Mathematics has also been fortunate in attracting good students from the beginning. In another context we have seen that a good deal of this was the result of the energetic work put into recruiting by the head of the department, Dr. Ralph Stanton. It should also be pointed out, however, that several other members of the department participated most actively over the years and special mention should be made of the now associate dean, Dr. K. D. Fryer. Since 1960 mathematics has offered special proficiency scholarships to students who ranked high in the senior mathematics contest as well as on the Grade 13 examinations in Ontario. Since that time approximately sixty top-notch students from almost every part of the province have come to Waterloo to major in mathematics. These scholarships were discontinued in 1966 to be replaced by the Descartes Mathematical Scholarships which are of a value of $4,000 each. They are awarded on the basis of achievement on the Grade 13 examinations including the problems paper. In 1966 six of these scholarships were awarded and it is anticipated that the programme will be continued.

Co-operative mathematics was begun in 1964. When it was planned, it was estimated that it would probably attract around 40 students and, under maximum favourable conditions, no more than 75. In actuality, 100 students were enrolled. In three years there has been another typical Waterloo spectacular increase. The current number of students enrolled in the co-operative programme is 450. Under the co-operative system honours mathematics is offered with actuarial and computer science options.

The faculty members in mathematics have always been distinguished for their enthusiasm and drive which extends in two very important directions. On the one hand they have always been deeply involved in a continuing dialogue with their colleagues throughout the world. In addition to having more visiting professors than any other department, a number of colloquium addresses are arranged each year to bring distinguished visiting scholars to the campus. For the past two years Waterloo has held
a conference on combinatorial mathematics and graph theory and in 1967 it will be host to the Fifth International Conference on Functional Equations which will bring to the campus great scholars not only from throughout the free world but from the Soviet Union, Rumania, Poland and Hungary. On the other hand the faculty has been most intimately interested in its own students. Quite apart from any counselling services provided by the University the mathematics group has a substantial number of members who on a completely voluntary basis have offered their services as counsellors to mathematics students. No student is required to seek faculty counsel but he is given the names of faculty members available and can go to any one on the list to talk over his problems. It is an informal system which works well.

Now that, as of January 1, 1967, mathematics is a separate faculty at Waterloo its structure has been reorganized. Succeeding Dr. Ralph Stanton, is Dr. D. A. Sprott as dean of the faculty. There are two associate deans—Dr. K. D. Fryer and Professor C. F. A. Beaumont. The new faculty has five departments: the department of applied mathematics whose head is Dr. P. J. Ponzo; the department of applied analysis and computer science, Dr. D. D. Cowan, head; the department of combinatorics and optimization under Dr. G. Berman; the department of pure mathematics with Dr. D. Wertheim as head and finally the department of statistics which is headed by the dean—Dr. D. A. Sprott.

The new building which will house the new faculty is under construction. It is elaborate and impressive and is expected to be ready for use at the beginning of 1968. The first two floors are devoted to housing all the computer equipment which at the present time includes four computer systems—IBM 1620, IBM 1710, IBM 7040 and IBM Systems/360 Model 40. Two large amphitheatres are also located in this area. The third and fourth floors of the building will be entirely devoted to undergraduate teaching and study facilities with classrooms of 75, 50 and 25 seat capacity. These floors will also contain a large examination room, a student common room and several undergraduate study rooms. On the fifth floor the faculty and administrative offices will be
housed as well as two conference rooms, a library colloquium room and a faculty reading room. The sixth floor has been designed to accommodate graduate students, seminar rooms, a graduate student reading room and some extra faculty offices. It is expected that this building will accommodate the faculty of mathematics well into the 1970's. Including graduate students, the present enrolment in mathematics is 1130. In the fall of 1967 it is anticipated that there will be over 1500 students enrolled in the faculty and ninety faculty members.

Graduate work is one area in which continued growth is expected. Now that it is a separate faculty the Master’s degree has been changed from an M.A. to a M. Math. The faculty also offers the M. Phil. and the Ph.D. degrees.

The growth of mathematics at Waterloo and its evolution into a separate faculty is still another example of how the University has kept abreast with immediate and contemporary requirements. The mathematicians at Waterloo are fond of quoting one of the greatest living mathematicians, Professor Richard Courant:

Mathematics is no longer the preoccupation of an academic elite; it is a broad profession attracting talented men and women in increasing numbers. The scope of mathematical research and teaching has been greatly extended in the present period, and mathematical techniques have penetrated deep into fields outside the mathematical sciences such as physics, into new realms of technology, into the biological sciences and even into economics and the other social sciences.

The mathematicians at Waterloo have been thoroughly cognizant of this trend of the last ten to fifteen years and, characteristically, have kept up with it. It is little wonder that Waterloo is known throughout North America and beyond as the home of a group of teachers and students who keep in the forefront of contemporary mathematical developments.
The period covering the University of Waterloo’s first ten years coincides rather closely with another phenomenon which has recently developed in higher education. In the last decade there has been a very obvious upsurge in the field of advanced or graduate work. Here we have but another example of an escalation process in the field of education. In North America particularly the number of years devoted by the individual citizen to formal education has increased consistently over the past century.

In Canada at one time what was called "high school entrance" was considered adequate minimal education. Until quite recently completion of high school represented a fairly high level of education. Today there seems to be almost a mass demand for a baccalaureate degree. Inevitably, then, the demand for other degrees beyond this level is also increasing. This trend had become a recognizable fact in 1957. Accordingly, the earliest literature produced to explain the potential of a new university at Waterloo included many references to graduate studies. In Bruce Kelley’s first description of a coming faculty of science it was indicated that graduate work would begin within a year of the establishment of the faculty.

Perhaps even more aggressive in his thinking about graduate work was Dr. Ralph Stanton. As Stanton analyzed the existing situation in higher education in Ontario he was convinced that no first-rate student should stop at the bachelor’s level. He was similarly convinced that any potential new university had to include graduate work in its programmes if it were to be a true university in twentieth-century terms. Stanton especially, but
many of his colleagues in the early days as well, was also acutely aware of the practical advantages in offering graduate courses which included the fact that it was easier to attract better scholars if they knew that part of their time at least would be devoted to teaching at the graduate level. Once again Waterloo brought together timeliness, practicality and drive. The drive was personified in Stanton but it was strongly supported by almost all the originals of the University of Waterloo faculty.

As a result, only a year after the then Associate Faculties enrolled their first students a programme leading to a master’s degree in mathematics or in applied mathematics had been developed. In 1960 the University held its first convocation and here indeed is a Waterloo first—the first degrees granted were all graduate degrees! Surely there is not another university in North America which can claim this interesting anomaly. In all, eight students* were admitted.

With this strong and unique start, it would be expected that graduate studies at Waterloo would flourish. In fact they have, but again, as is usual at Waterloo, the organization, the structuring and the content of graduate studies have rapidly gone through several evolutionary phases and at the present time, while graduate work flourishes to an astonishing degree, it is still in a state of flux.

In the beginning the approach was thoroughly traditional. In 1960 Dr. Ralph Stanton, chairman of the mathematics department, was appointed chairman of the faculty of graduate studies. He admits quite frankly that at that time the organization of graduate work at Waterloo set out to follow the pattern set by the University of Toronto—not a bad pattern inasmuch as Toronto then was undoubtedly pre-eminent in Canada in the field of graduate work. Immediately on taking office, Stanton extended the graduate programme in his own department (mathematics) to the doctorate level and master’s programmes in civil engi-

neering, electrical engineering and physics were added. In 1960 there were 22 graduate students enrolled, 11 of whom were in mathematics.

From this point on the growth has been steady. The next year graduate programmes were offered in the two remaining engineering departments—chemical and mechanical. The second science programme—biology—was added and the first humanities programme—German—was also offered. That year the enrolment in the faculty doubled. The next year (1962) further programmes in history, philosophy and psychology were added as well as chemistry from the faculty of science; the enrolment was 166. At the present time the University offers programmes leading to a master’s degree in seventeen disciplines and fourteen Ph.D. programmes as well. Altogether 789 students were proceeding to graduate work in the 1966/67 term. The department of psychology now has the largest single enrolment—136 students with 93 of them proceeding to the Ph.D. degree; civil engineering now has the second largest number of graduate students (99) and mathematics is third with 89.

The first Ph.D. degrees were conferred at the June convocation of 1963. They were earned by Peter H. Roe in electrical engineering and by Carl Turkstra in civil engineering.

In the light of this record which shows that at the graduate level Waterloo parallels its undergraduate achievement inasmuch as graduate studies are the fastest growing of any university in Ontario, it would appear that, at least in this area, the University could follow a traditional pattern and duplicate the successes it had earned in other fields by taking new approaches. But this is not the spirit of the University. In graduate studies there existed the same kind of restlessness, the same desire to branch out and try new things which characterizes the entire University. The orthodox graduate school approach under Stanton certainly established graduate studies firmly at Waterloo, but by 1963 a new approach was beginning to manifest itself. It began in engineering. The essential question which the academics at Waterloo have been working on since 1963 in simple terms is merely this: are graduate
studies a logical extension of each existing undergraduate faculty or do they have some distinctive element strong enough to set them apart and justify them being segregated and administered as a separate faculty?

The trend was set in September, 1963, when the faculty of engineering established a division of graduate professional studies. At this point, this programme had two features quite distinct from the usual graduate studies programmes. In the first place its students would be professional engineers employed in industry and, secondly, it would be offered on a co-operative basis. The justification for the programme was Dean Wright's answer to his constantly-stated position that engineers in professional employment must keep abreast of advances in engineering and science because "new knowledge is displacing established material at an ever-increasing pace." The programme could qualify the students for an advanced degree but it was primarily designed to keep them up-dated in their specific fields. Its content, however, was definitely at the graduate level. The co-operative feature was not quite the same as that which applies to undergraduates. The students continued in their jobs and could enrol either on a full-time or half-time basis. A full-time student would spend four days a week at Waterloo during each four-month semester he chose to attend while a half-time student would attend the university two days a week. Altogether it was not a particularly radical challenge to the graduate faculty as such but it was the first overt movement on the part of another faculty to move into an area which could be properly described as graduate studies.

A further move away from the usual approach to graduate studies developed out of the establishment of institutes at the University. The first of these was the institute of design which quickly expanded to include a department of design in the faculty of engineering.* The significant feature about the department of design was that it offered degrees only at the graduate level. The programme for graduate studies was the conventional one but here

*See Chapter 7 for the details regarding the study of design at the University of Waterloo.
we have a curious feature—a faculty department with no undergraduate programme. In practical administrative terms a question of immediate significance was posed: which faculty—engineering or graduate studies—could properly claim the department of design? As we have seen, engineering made the claim stick and a further anomaly was created.

Meanwhile, other changes were occurring within the faculty of graduate studies. Of these perhaps the most significant was the decision to offer the master of philosophy degree. For some time many universities have been exploring the area in graduate studies between the master’s and the doctoral levels. In part, this investigation has arisen out of a somewhat sceptical analysis of the value of Ph.D. programmes as they presently exist in North America. Many reputable scholars have serious reservations regarding the true academic significance of a Ph.D. Facetiously it is often referred to as “the professor’s union card.” A good deal of the scepticism centres on the so-called research project which is required for the Ph.D. degree. Traditionally the major requirement for a doctorate is a “thesis embodying the results of original research.” This thesis, in turn, is defended in an oral examination before a committee usually appointed by the faculty of graduate studies. What has happened in the opinion of some of our best academic minds is that an alarming proportion of these theses embodying original research are inquiries into areas of miniscule and minimal scholarly significance. The usual defence is that it is not so much the result of the original research which is important in Ph.D. training as is the learning of the techniques of accurate research.

However, enough ferment has been generated in important graduate schools in recent years to produce some alternative proposals and of these the master of philosophy degree is the most generally accepted compromise position. Generally speaking, the M.Phil. degree is earned by fulfilling all the requirements usually laid down for a Ph.D. degree except the thesis based on original research. A candidate does have to produce some sort of thesis at Waterloo which is approximately at the same level as that
required for a master’s degree. At this point, either the essential usefulness and value of the M. Phil. or the nature of its acceptance within the academic community is still in doubt. Waterloo, however, pushed on with it but it is only obtainable in the faculty of arts in four departments: German, History, Philosophy and (up to this year) Mathematics. Quite apart from the academic considerations which surround this degree, the fact that it is only offered by one faculty provides further evidence of the fragmentation which was developing within the field of graduate studies.

Ultimately, it had to be realized that graduate studies as they were evolving at Waterloo were certainly in a state of flux and, perhaps, heading into a state of confusion. Strong-minded and aggressive faculties, each with its own firmly held concept of graduate work, did not produce a condition under which the traditional graduate studies administration structure would work effectively. The resignation of Dr. Stanton as dean of graduate studies and his subsequent departure from the University made it imperative for the University to decide whether to carry on with the original structure of the faculty or modify it. Dr. J. Sayer Minas was appointed chairman of a new council on graduate studies and subsequently named “dean” but the structure is now quite different. Graduate studies is no longer a separate faculty but is the individual responsibility of the arts, science, mathematics and engineering faculties. The council on graduate studies is small—eight members—and it functions more as a planning group than as an administrative entity. In the words of Dr. Minas, “One of the major jobs of the new council is to make proposals and plans for the growth of graduate work and other divisions such as institutes and graduate schools and to set up some scheme for representation on this council either on a faculty, departmental or programme basis.” Dr. Minas went on to say, “There is going to develop a number of new degree programmes that are interdepartmental or interfaculty, as well as a number of new programmes which are not degree programmes but essentially programmes of advanced research.”
At the moment this new type of graduate work (at least new at Waterloo) stems largely from the formation of institutes. At the same time that the institute of design was created, a second and more broadly based institute in terms of its interdisciplinary nature was established. This was the water resources research institute. It was formed in June, 1964, and its purpose was to co-ordinate research studies in the general area of water resources, develop new research projects and initiate specialized teaching programmes. By 1966 the institute had a membership of twenty-five composed of faculty members from the five departments of the faculty of engineering and the departments of biology, economics, geography and chemistry.

As usual at Waterloo, the water resources research institute developed to meet a known and recognized important contemporary need. In the initial descriptive brochure issued by the institute, the President of the University said, “One of the continuing problems of society is the management, conservation and improvement of perhaps our most important natural resource—water. Water is a major factor in our transportation system, a source of energy, a key to recreation and other amenities, and an essential to the continued growth of our agriculture and industry.” In 1966/67 members of the institute were involved in seventeen projects sponsored by the National Research Council and four projects supported by the Ontario Department of University Affairs as well as approximately $20,000 from other sources for other projects related to water resources. In addition the institute presented the first annual symposium on water pollution research which was held in January, 1966, at the University of Waterloo. It plans to hold a technical seminar on water pollution control in the chemistry industry in May, 1967.

Like design, it has also been actively engaged in the educational aspect of its field of interest and has prepared and submitted a proposal for a master of applied science degree course in water resources management. It is this kind of thing that Dr. Minas had in mind when he visualized an ever-increasing number of graduate programmes of an inter-faculty or inter-disciplinary nature.
Now a third institute has been established, the planning and resources institute. It is under the direction of Dr. Antoon de Vos who has described the immediate objectives of the new institute this way: “There is a serious lack of basic and applied research in the planning field. Professional planners are concerned with immediate problems and the work of university scholars is often fragmented among a number of disciplines. The institute, however, provides the mechanism to develop an inter-disciplinary approach to planning and resource development research and makes it possible to take on larger projects.” Like the institute of design, the new institute will contract out to private and public clients and will also seek research grants for specific projects. Again it is inter-faculty in nature. It also relates to the other two institutes and envisages a time when research projects are of a scope so wide that the activities of all three will be involved and complement each other. At the moment it has announced no plans for the development of academic courses but, if the pattern holds true, one might ultimately expect this institute to produce an academic programme at the graduate level.

Graduate studies at the University of Waterloo is far more than merely the traditional extension of conventional undergraduate university work. Both in the way in which it is administered and in the areas which it covers, it reflects the freshness and contemporary awareness which is the University’s trademark. It not only encompasses all the usual graduate programmes but both the faculties and the institutes have developed other graduate programmes which are not only academically sound but are of immediate relevance to the needs of contemporary society. In addition to those already mentioned one other should be cited. It is the two-year postgraduate programme in applied psychology which is offered on the co-operative basis and is designed to overcome the shortage of trained psychology graduates in hospital, government, industry, education and health services fields. The students spend alternating periods at the University and in the field gaining practical experience. They earn a master of applied science degree in psychology. This programme began in July, 1966.
Altogether the speedy establishment of graduate studies under Stanton and its subsequent development in an atmosphere of flexibility not usually associated with graduate schools has served the university well. The fact that its academic quality received almost immediate recognition was not only gratifying but greatly strengthened the recruitment of able faculty at the university.

It also served quickly to bring on campus an element not usually found in strength at new universities—a large body of graduate students. In the total university community the presence of graduate students is an enriching factor. Many of them come from a wide range of other universities and as they intermingle with the undergraduate population they serve to broaden perspectives and cut through any danger of developing a "provincial" attitude. They also bring a capacity to criticize. In their own undergraduate experience at other universities they have encountered desirable things which they do not find at Waterloo. They can call attention to these deficiencies. They are in the unique position of being able to speak freely both to undergraduates and to faculty and a productive and useful dialogue can result. At Waterloo this dialogue has taken place to the benefit of the University.

Finally, a university which produces well-trained graduate students in the quantity that the University of Waterloo has now achieved will very shortly be sending men and women into the other universities of the continent who already are, and in continuing numbers will be, examples of what the Waterloo experience is. To a large extent the academic reputation of a university depends on the quality of the graduate students it sends out into the wide world of higher education. The University of Waterloo is uniquely fortunate in that, in a decade, scholars who have received their advanced education at the University are now moving on to campuses throughout North America and, indeed, into many far corners of the world.
One approach to higher education at Waterloo which is traditional is the incorporation of church-sponsored colleges into the total university. Considering the fact that the university was first conceived as bringing two church colleges together under a non-denominational umbrella it would have been almost impossible for Waterloo to take any other route. It should be said, however, that those who created the Waterloo scheme had no desire to try to do it any other way. With the exception of newer universities such as Brock, Trent and York all the universities of Ontario, regardless of when they were founded, have church-related colleges or, like Queen’s, have developed from a church-sponsored college. In Ontario, until most recent times, religion and higher education have been closely intertwined. At Waterloo this is considered to be a good thing. As a basis on which a constitution for the Associate Faculties might be established the board went on record as follows:

The Board of Governors of Waterloo College Associate Faculties recognizes the Christian religion and authorizes its administrators to include a religious part in the official functions of the College... without regard to a specific denomination of the Christian faith.

It could be argued, of course, that since two of the major components of the proposed university were already well established church colleges the board really had little choice. While this may be so, it is equally true that the founding fathers of the University of Waterloo firmly believed that church-sponsored colleges were a valuable component of a university. The fact that
they actively went out and encouraged the affiliation of further church colleges is the proof that they wanted this particular element at the University of Waterloo.

At the time when the present site of the University was determined, federation as originally conceived was still expected. On the original 240 acres specific parcels of land were to be set aside for both Waterloo College and St. Jerome’s with the expectation that they would shortly build on the new campus. As soon as he heard that the Associate Faculties was negotiating for the site west of Waterloo College, the ever-alert Father Siegfried recalls that he promptly went out to look it over and, ploughing through snow (it was December), examined the new site and chose the place where he would like the new St. Jerome’s College to be located. It is exactly the spot where the St. Jerome’s College complex stands today. Waterloo College was to have several acres at the point where present-day University Avenue is joined by the road which leads into the arts complex of the campus. Both sites represent “prime choice” in terms of campus location. The land between the proposed Waterloo College site and the proposed St. Jerome’s College site, i.e. along the west side of Laurel Creek, was designated for other church colleges which might be attracted to the University of Waterloo. In fact, this land has provided the sites for the two additional colleges which have come to Waterloo—St. Paul’s, the United Church college, and Conrad Grebel, the Mennonite college.

St. Jerome’s, of course, was all set to go. As far as they were concerned the series of discussions between themselves, Waterloo College and the Waterloo Associate Faculties was satisfactory. On the whole they had not become embroiled very deeply in the debate. They did oppose the suggestion made by Waterloo College that it be the only federated college and that St. Jerome’s be an affiliated college but this did not develop into a major battle and Waterloo College conceded the point. St. Jerome’s also felt at the time of federation that ultimate control of arts programmes should reside within the university and not at Waterloo College but, like the Associate Faculties, they had assumed that Waterloo College
would carry on the University arts function on a temporary basis. At no time was there any serious break in relations between St. Jerome's and Waterloo College. However, when the breakdown occurred between the Associate Faculties and Waterloo College and the University was desperate for teaching facilities for arts, St. Jerome's was asked if it could operate the arts programme for a year. They did not feel that they had either the staff or competence to assume this heavy responsibility and refused but if one recalls the original members of many of the departments of arts it will be seen that St. Jerome's did make a very substantial contribution in the way of original personnel.

The formal federation of St. Jerome's with the University of Waterloo was accomplished when an agreement was signed on June 18, 1960. At the same time Renison College, which was opened by the Anglican Church in Waterloo in 1959, entered into an agreement of affiliation with the University. It was also announced that both the United Church and the Mennonite Church were planning to establish colleges in association with the University in the near future.

Since its federation with the University in 1960, St. Jerome's has increased from eighty-five to three hundred and thirty-two full-time students, with an increase in faculty from fifteen to twenty-six. In the beginning they offered thirty-five courses and now offer fifty-five. St. Jerome's students receive approximately two-thirds of their instruction at the college and the remainder at the University or the other colleges. On the other hand, a good number of University students receive instruction at St. Jerome's. The college also enrolls part-time students, most of whom are elementary school teachers preparing for a college degree. The college has its own library facilities and the number of volumes has grown from approximately two thousand to twelve thousand. St. Jerome's students have established an excellent academic record and two of them have been awarded Woodrow Wilson Scholarships.

For the first two years St. Jerome's continued to operate on its Kitchener east-end campus, known as the Kingsdale campus, but in 1962 construction was begun on the three-building complex on
the site chosen by Father Siegfried which included an administration and classroom building, a men’s residence and a women’s residence to be operated by the Sisters of Notre Dame. The complex also includes kitchen, dining and recreational facilities as well as a library and chapel. When plans were announced for the St. Jerome’s building on the university campus it was also indicated that in the future a House of Philosophy for the Congregation of the Resurrection scholastics would be built close by. This was St. Eugene’s College which was started in 1964. It is not on the campus proper but is directly across the road which marks the western boundary of the original campus and only a stone’s throw away from St. Jerome’s proper.

The fact that the association between St. Jerome’s and the University of Waterloo has worked out so well and been mutually advantageous is a good indication that the original concept was basically a good and a workable one. St. Jerome’s has had no difficulty in maintaining its own strong identity and at the same time fitting in without any trouble to the total university operation. St. Jerome’s is happy to be part of this vibrant new university and the University is proud of its association with the college. It is also grateful to it for the help and support it provided in the early years, for the active role which the members of the college have played both at the faculty and student level in developing the academic and social life of the University and for the hospitality and amenities which have been so generously made available to the University whenever they were required—and this includes Father Siegfried’s bookcase!

Equally benign has been the relationship between the University and the other church-sponsored liberal arts college—Renison. Although Renison was not involved in the original negotiations since it was not incorporated and established in Waterloo until 1959, it has actually been formally associated with the University as long as St. Jerome’s. At its beginning in 1959, it was operating in a very small way out of a house on Albert Street. It was quickly caught up in the whirl of enthusiasm which characterized the
University from 1960 on. At the same time that St. Jerome's announced it would begin construction so too did Renison which, in 1962, erected a building to provide accommodation for forty men and forty women students as well as the other usual amenities and some classroom space. It too is a handsome building and an asset to the campus. Its principal is Professor Wyn Rees who also holds an appointment in the university department of philosophy. Like Father Siegfried, Professor Rees has the happy faculty of sustaining the firm church-oriented identity of his college and at the same time fitting in with, contributing to and becoming involved in the larger affairs of the University. Renison, still a young college, does not as yet have a large student enrolment or faculty but it continues to grow and eventually hopes to achieve the position where students enrolled in its liberal arts programmes will receive most of their instruction from its own faculty members. Again, like St. Jerome's, Renison helped the University in the first year of its arts faculty by providing teaching assistance from three college faculty members. The students who live in residence at Renison have also developed their own particular identity and the college has been so successful in attracting students who want to live in its residence halls that in 1964 it added a hundred-bed men's residence wing to bring its total accommodation up to one hundred and eighty.

The other two church-related colleges up to this point are residential colleges only. The first of these to take shape on the campus was St. Paul's United College which was completed on a site adjoining Renison in 1963. St. Paul's accommodates one hundred and fifty students and has been a success from the beginning. Its first principal was the Reverend Dr. Douglas J. Hall who left in 1965 to become professor of systematic theology at St. Andrew's College, University of Saskatchewan. He was succeeded by the Reverend Alan M. McLachlin who is the present principal. Under its two principals St. Paul's too has developed its own unique personality and, like the other colleges, its facilities have always been available when the university had need for them.
The last of the present four church-related colleges to come to the campus was Conrad Grebel. Construction was begun on this college in 1964. A handsome building, it accommodates eighty men and twenty women students and, like the others, has a beautiful chapel. It is unique in that, for the first time, the Mennonite Church has established facilities on the campus of any university in Canada. Waterloo, of course, was a logical choice for such an experiment inasmuch as there is a large Mennonite population in the immediate vicinity of the University. Again it is a tribute to the genuine spirit of co-operation which exists between the church colleges and the University that this first Mennonite venture in this field should fit in with no problems whatsoever. Part of the credit for this goes to the fact that the president of Conrad Grebel College, Dr. J. Winfield Fretz, is, like his fellow principals, admirably suited for the work. He came to the campus before the college was constructed, got the feel of the University and since his arrival his wisdom and counsel have added much to the development of university life as it is found at Waterloo.

In many Canadian universities church colleges have tended to be a divisive influence but this certainly has not happened at Waterloo. On the contrary, the relationship is almost ideal. Quite apart from such practical things as the fact that the church colleges provided the first opportunities for residence life on campus (a very considerable and valuable contribution) more intangible but perhaps more significant results have accrued from this happy association. At Waterloo the ecumenical spirit is a reality. There have never been denominational squabbles on campus and there is no indication that there ever will be. The way in which the church colleges operate at Waterloo is living proof that when this system is working in a spirit of mutual co-operation great benefits can be derived both from the university and the colleges. Their presence and their practice is the actual manifestation of the Christian spirit which the original governors wanted to see develop at this university. It thrives on tolerance and proves that adherence to varying faiths or creeds does not constitute a barrier
to scholarly achievement. Quite the contrary, one of the most important ingredients in acquiring wisdom—the capacity to respect another man’s most deeply held convictions—is brought into focus by the existence and the happy relationship between the University and the church-related colleges.

At Waterloo there is another unusual entity which, although it is in every way a part of the University, yet exists strangely apart from the normal academic structuring. This is the school of physical and health education which is not a faculty, is not a component of any faculty, reports directly to and is under the supervision of the senate and, in its day-to-day operations, its director reports to the vice-president, academic. It is not an institute either in the sense that design is part of engineering or in the sense that the other institutes are interdisciplinary. In short, it is a real hybrid or “sport.” Its role is further confused by the fact that the director of athletic programmes reports to the director of the school of physical and health education. The University of Waterloo always seems to have had trouble sorting out its athletic activities either in terms of extra-curricular or academic programmes and many students and faculty members feel that there is a good deal of administrative straightening out to be done in this area yet.

Nevertheless, physical and health education has managed to chalk up a considerable record of achievement. It began in 1964 with a one-year programme in physical education for university graduates. It was designed, within one year, to add sufficient specialized knowledge to qualify its students as either teachers or recreation supervisors and the successful completion of the course earned the student a bachelor of physical education degree. The then assistant director of athletics at Waterloo, Dan Pugliese, was named chairman of this newly formed programme which was given the formal title—department of physical and health education. Carl Totzke, the athletic director of the University, was also included on the staff as was P. J. ‘Pat’ Galasso formerly athletic director of Queen’s University. The remainder of the work was carried by a group of part-time lecturers drawn from the Twin
Cities area, most of them medical doctors and the rest experts in some field of athletics.

The next step was in 1965 when summer courses were announced. The programme was designed to be the equivalent of the postgraduate year leading to the bachelor's degree in physical and health education. To qualify, students had to enrol in a six-week programme for four summers at which time they would earn a degree. This had added significance inasmuch as it was the first complete programme to be offered by the University by which a degree could be earned through summer school attendance. It is also significant that this was not a part of the work of the department of extension but rather remained entirely within the control of the department of physical and health education.

The latest development is the introduction of the co-operative feature to B.P.H.E. programmes. Beginning in 1967, the department which has now become a "school" will offer a four-year bachelor of physical and health education programme on the co-operative timetable. Within a year—that is by 1968—it is expected that this new programme will supersede the one-year post-degree programme which will be discontinued. The new course will include a total of twenty-four courses, thirteen in physical education, four in biology, English, psychology and sociology plus electives in arts, science, or the social sciences. The graduates will be specifically trained either to take up teaching positions in this field or to work in various agencies which involve physical and health education activities. At the same time that physical and health education became a school with Dan Pugliese appointed as director, it increased its faculty and also incorporated the department of athletics the director of which is Carl Totzke. The department of physical and health education which is the other component of the school is under the chairmanship of Professor Norman Ashton.

It is still too early to determine whether or not the curious structuring of this school is either an asset or a liability. It could well be that most of the objection to it merely results from an instinct to keep the organizational structure neat and tidy. In any
event, there is no doubt that in the three years of its operation the programmes have been successful, have attracted many students and have placed their graduates in key posts throughout the country, and the enthusiasm which has been generated for the new co-operative feature augurs well for continued development. It is expected that approximately seventy-five students will enrol in the new programme when it is first in operation in the fall of 1967.
THE ADMINISTRATION

Ten years—a single decade—and a university which in 1957 had no money and no employees now looks something like this: 5,700 students; 400 faculty members; a total payroll of over 1,400 people; an operating budget of $14,000,000 a year; $11,000,000 worth of construction nearing completion and another $14,000,000 worth of new contracts awarded.

Whether Professor G. Northcote Parkinson likes it or not, it is impossible in our society to operate a venture of this size (and particularly one which has to account to government) without creating a complicated administrative structure. University administration, both in practice and theory, is understood by few if any people, including those intimately connected with or part of universities. Hard-headed and quite sane business men who, in Canada, are the dominant element in boards of governors of universities very often seem to think that the modern university is not really very different from its monastic beginnings. Personnel, services and expenditures which any man running a business of $14,000,000 a year would not even blink at, suddenly become incomprehensible to that same man when they are associated with a university. No generalization applies to everyone, of course, but the overall effect of this kind of thinking has been that universities are expected to get the same services for less money than would be expended in a business equivalent.

As a result despite significant improvements in recent years, universities are still regarded as fair game by fringers or incompetents who can’t quite make it in the world of business. Unhappily there are some grounds for this kind of thinking. All too often a
man whose competence and skill would command $20,000 or $25,000 in the world of commerce is expected to utilize those same skills to the same degree for salaries ranging down to half the going rate in the open market. There is a strange mystique that a man engaged in some phase of the administration of a university is under less pressure than he would be in the world of business. This arises from the fact that universities are not "competitive" in the generally understood business sense of the word. This is partially true, but the administration of a university involves a whole set of other pressures which are either totally unknown or minimal in industry.

One of the most difficult of these pressures develops out of the varied people who constitute the university community—students and faculty, and especially the faculty. Again, generally speaking, there is a tendency among academics to feel that all that should be required is for them to make their needs known and an enlightened society should promptly supply them. Ideally, perhaps, it should be this way, but it is a hard, cold fact that the selfless, dedicated scholar is comparatively rare on any campus. Academics are human and given to the same needs for self-satisfaction and recognition as the rest of the human race. Some indeed do have a greater facility for rigid self-assessment but, naturally enough, a good many scholars can delude themselves just as easily as anybody else. But the one thing which most academics do possess by virtue of their training, which includes the discipline of learning to reason, is a great facility to rationalize any position they choose to take and to express it with considerable fluency. And there is another factor: quite often the community of scholars of a university have been driven to extreme positions by a failure on the part of governors of a university to realize that the academic is indeed a human being and in many areas possesses a competence apart from his academic specialty which could be put to good use in the service of the university.

At Waterloo, we have seen that in its formative years the interaction between administration and faculty produced good results. Indeed, in those days under the pressures of time and lack of
personnel almost everybody had a finger in everybody else’s pie. The plumbing for the first building was designed by a professor; the now obviously correct choice of a site for the University was determined by the faculty; and on the other side of the ledger the concept of co-operative education came to the campus and got its initial support not from academics but from administrators.

It would be happy to be able to record that this same contentious but exciting and effective interaction still dominates the operation of the University of Waterloo. In fact it does not and no one is to blame. The simple truth is no one has yet discovered how to make this work in a large multifaculty and rapidly growing university. At Waterloo there have been committees appointed, studies made, reports submitted, all in good faith, aimed at resolving the conflict between administration and faculty. All of them have been but glancing blows. Not one has succeeded in producing a workable alternative structure to that which presently exists. The same problem applies to every university in North America, and in many of them is much more acute and disturbing and distracting than at Waterloo.

Indeed, considering the pressures under which it has been built and the rate at which it has grown, the University has been singularly fortunate in meeting the intricate problems of administration. Here the board of governors have been of great help. This is not an intrusive board. Its members do not go around the campus “checking up.” The board has always had confidence in the administrative leadership of the University. Another asset has been that the chairman of the board, while never overtly interfering, has kept an office on the campus and is, by nature, sensitively equipped to comprehend the significant vibrations which are constantly disturbing the atmosphere of any institution of higher learning whose faculty and students are ever at the barricades striving toward new break-throughs relevant to finding answers to the mystery of the universe and the meaning of life. The President is not “an academic” and when the faculty gets restless they sometimes throw this up as the reason which explains why they are not getting everything they want as soon
as they want it. The same thing occurs on all campuses where the president does have an academic background. J. G. Hagey, however, is a president who, perhaps more quickly than anyone else, gained a comprehension of the challenges and opportunities of higher education which exist in contemporary society. It is this most useful understanding which has been a powerful contributing factor to the impressive number of "Waterloo firsts" which have been achieved.

On a day-to-day basis the man who has been most responsible for shaping the administrative structure of the University, struggling to adapt it to the academic purposes for which a university exists and striving continually to achieve a balance between the academic needs and the actual resources of the university, is A. K. Adlington. Adlington would be the first to admit that the results thus far achieved fall considerably short of the ideal. Some days he would put it much more strongly than that, but from the vantage point of an objective outsider, Adlington’s performance in this extremely difficult area is impressive. When he transferred from a position in industry to become Business Manager at Waterloo College he admits that he was partly motivated by idealism. Young though he was, he was already beginning to realize that just money and the manipulation of money would not provide the fulfilment he required. As the concept of the Associate Faculties was developed, along with its implication of the possibility of a new university, Adlington easily identified with it. Like the President, he too has a deep personal—almost emotional—involvement in the University of Waterloo. For ten years he has worked and struggled to bring about a realization of the greatness which he believes is the destiny of the University. He is usually one of the first to see the potential of a new and adventurous idea but, by the very nature of his function, he is also the man who must simultaneously ask the question "Can it be done?"

When a new academic building is required, obviously needed and from the scholar’s point of view should be got on with instantly, no member of the faculty worries about the drainage
difficulties of the site, whether or not the existing heating plant can cover off several thousand more cubic feet, how much it will cost to keep the floors polished and the windows cleaned or—and this seems to be a real open powder keg—where the parking lot will be placed to accommodate the automobiles of the people who are using the building. These are the things which, quite properly, are the responsibility of the Vice-President, Operations. Because they are not academic in nature does not mean that they can be ignored.

Before the embryo university moved down the street to the new site, Adlington was already deeply involved in its affairs as well as carrying on as Business Manager of Waterloo College. As we have seen, it was he who had to spend long hours working out the costs of land which might be used for campus expansion. It was he who had to keep the books, to investigate and make recommendations as to which bank the University of Waterloo might use. When the roof of Annex I or II leaked nobody blamed the dean; the problem belonged to the administration. Once any kind of building is erected there is a simple matter of housekeeping to be attended to. Janitorial service must be provided. The first sub-department of the administration was Accounting—originally a very small operation which today has developed into an elaborate complex in charge of the Treasurer of the University—Bruce Gellatly. The second sub-department was that which looked after the maintenance of those buildings which belonged to the Associate Faculties. Today this is a major department which, like Accounting, has gone through several evolutionary forms and is presently known as the department of Physical Plant & Planning. It is interesting that those who were directly associated with the Associate Faculties in the earliest months, but who were actually on the payroll of Waterloo College, had the same feelings as many members of the academic staff and they too chose to stay with the young university when it moved down to its present campus. Amongst these people were A. Bruce Gellatly, at that time Adlington’s assistant and now Treasurer of the university; and also Nick Lauer, one of the first
maintenance men at the university and still on the job, proud and happy with its success.

Keeping the books and looking after the buildings is only the beginning. Once a university starts expanding it acquires much valuable equipment and this must be safeguarded both from predators without and pranksters within. The first security officer at Waterloo was Fred Cook—"Cookie" to students over the last ten years. The enforcement of university non-academic regulations requires a special kind of skill and understanding and universities are lucky when they can find men who are able to combine authority with understanding. Fred Cook turned out to be such a man. His touch with the students has been almost exactly right and, indeed, in an expansive moment he will say that the faculty are harder to handle than students. What he has in mind particularly in this regard is the explosive problem of parking.

If anyone were to doubt how deeply and significantly the automobile has become incorporated into the North American way of life he would find more than ample substantiation in the intense attitudes which develop regarding the problem of parking. Incredible as it may seem, especially in the academic community, faculty councils can hold meetings at which they spend more time framing resolutions of protest about the parking facilities than they do on a new curriculum development. At Waterloo, during its second fund-raising campaign, there were actually members of faculty who made their contribution to the University contingent upon having ample parking provided immediately adjacent to the buildings in which they had their offices! Maybe some day some brilliant sociologist will tackle this alarming phenomenon which can distort values in some of the best trained minds, but in the meantime people like Fred Cook have to deal with it. He has to cope with a great many other problems too, with the result that as the University grew so did its "police force." The latest development is that the University now has a whole department called Safety & Security with a new director, a former officer of the R.C.M.P. whose special training is con-
sidered necessary to handle the intricate responsibilities which now exist in this area of administration.

Then there is the whole area of ancillary services. These presently include the University book store, the food services of the University and the University press.

Of these the bookstore is probably at the moment the most contentious, with food services, perhaps naturally enough, running it a close second. From its beginning the University has operated a bookstore on campus.* Originally intended to provide ready access to prescribed texts and widening its range of offerings almost every year since, the bookstore shows a profit—in fact quite a substantial one. Its operation represents a typical administrative problem. Originally, with small enrolment and moderate turnover, the bookstore was indeed almost exclusively a service. The campus was on the outskirts of the community; there was no bus service; the local bookstores were not conditioned to stocking university supplies and it was almost essential that a bookstore be developed on campus. With growth, its profits increased. In recent years it has been the position of the students that a university bookstore has no right to make money. They argue that the prices of text books (which undoubtedly are often high) should be reduced. The university administration, on the other hand, points out that the money made on text books which, undoubtedly, a private operator would also make, can be ploughed back into other services, for example, food or athletic services, to keep other student costs down.

Feeling has run high in this matter until, for the first time in its ten-year history, the students marched on the President. Carrying books, guitars and smoking pipes, several hundred of them invaded the fourth floor of the Arts Library Building where the President’s office is presently located, and squatted in the corridors, the secretaries’ offices, and at least a hundred of them crowded into the office of the President which really, is not a very

*Under Mrs. Elsie Fischer who was another of the Waterloo College staff who came to the University of Waterloo in its earliest months and is still in charge of the bookstore.
large room. The discussion was amiable and the President apparently enjoyed it. Certainly, when he emerged from his student-crowded office he could say with a smile that he had no complaints about the behaviour of his students, that they acted reasonably and that a solution would have to be found. There is nothing unusual about this. The tradition of maturity which the first students brought and established at Waterloo still continues.

Because there are still no commercial establishments immediately adjacent to the campus, the feeding of students is a real problem at Waterloo and until the new Food Services Building is completed it will continue to remain a mystery to many how Bob Mudie, manager of food services, could produce as varied and edible a fare as he has over the past several years under conditions which would be the despair of most master chefs. If anything, the University has been slow in providing for the elementary needs of the inner man, but again, it has been a question of juggling dollars. For some strange reason, the provincial government which provides most of the funds which keep Waterloo going, has not given adequate financial support to the bed and board requirements of students. Perhaps this too is a spill-over from medieval times when the image of the scholar was that of a poor and starving creature. But in the affluent society this is not acceptable and it is a tribute to the administration of the University of Waterloo that, working under the handicap of far from adequate facilities, it has managed to feed its thousands of students and feed them reasonably well. In very fact, it is a bit of a loaves-and-fishes miracle.

In the beginning what is now the university press was a mimeograph machine, but today the press has excellent equipment and, although the University still has a good deal of its printing needs supplied from the outside, the press turns out an impressive amount of work every year. Its course has not always been smooth either and its ultimate function is yet to be defined, but it services the needs of students, faculty and administration effectively.
In addition, the administration must supply secretarial and clerical help for the academic faculties and departments of the university. Altogether this involves the employment of many hundreds of people, and, therefore, like any other modern business, there is a personnel department under the direction of Mr. E. S. Lucy. In 1965 another department called systems & procedures was created under the direction of Mr. A. Jordan. A unique approach for Canadian universities, this department uses modern computer, data processing, and systems analysis to maintain efficient and economical business and clerical procedures as the University continues its fast-paced growth.

Then there is money—how to get it, spend it and account for it. This now is primarily the responsibility of A. Bruce Gellatly, the Treasurer of the University, who directs the business office, (payroll, etc.) the purchasing department and, perhaps most important of all, the developing of university budgets on which submissions for provincial support can be made. Up until this year this function was included in the office of A. K. Adlington, who was then known as Vice-President, Finance. His right-hand man was Bruce Gellatly who was called Comptroller. Now, with the burdens becoming increasingly heavier, the functions have been split.

Another large area of services which have to be provided are those which directly relate to the students. These include counseling services, health services, housing services, residence administration, overseas student activities, creative arts activities, the dean of women’s office, and liaison with the Federation of Students. All these have been lumped together under a Provost. The first and continuing Provost at Waterloo is W. G. Scott. As we shall see, almost all these activities were generated by the students themselves who brought them to the attention of the university administration and ultimately got action.

And finally there are the academically related services which are primarily the Registrar’s office and the Library. The university librarian, Mrs. Doris E. Lewis who, as we have seen, continued on with the University when the separation occurred between the
University of Waterloo and Waterloo Lutheran University. Today she has a large staff with all the usual adjuncts and administrative problems associated with a library. The Arts Library is her particular pride. At the moment it is housing some 200,000 volumes in the humanities and social sciences and when the final three floors are added it will have accommodation for 800,000 volumes. Besides the usual service quarters there is seating space for 400 readers; when the building is completed 2,000 readers can be accommodated. In addition there is an engineering and science library housing 50,000 volumes of books and bound periodicals, 1,200 current journals and a good selection of reference material.

In the near future an engineering, science and mathematics library building will be constructed. There is also a growing collection of photo records, microfilms and microcards, increasing at the rate of some 50,000 volumes per year. The library also issues a handbook to all students in order to facilitate the use of the library. The system certainly seems to be working. It is a particular pleasure to go in through the impressive arches of the Arts Library to the red-carpeted first floor where an atmosphere has been created which says to the student books are valuable and useful; books are good companions; books are meaningful and books are here for you.

The position of the book in the community of learning does not enjoy the supremacy once associated with it. Prophets of the electronic age, chaps like Dr. Marshall McLuhan, have shown that there are other significant factors in the learning and teaching processes which challenge the position which the library has traditionally held from the days when monkish scholars devoted lifetimes to the careful copying of valuable records and manuscripts. No one quite understands the full implications of what may lie just around the corner in terms of new methods of exposure to knowledge. Although the University of Waterloo has amply proved that it is “with it,” this is one area in which there is unlikely to be another “Waterloo first.” The University does have a department of audio-visual aids, and such things
as closed circuit television have been incorporated into some of
the new teaching buildings, but the university is moving with
unusual caution in this area.* And well it might. As we know it,
the ideal university experience is, first, the acquisition of knowl-
edge and, hard on the heels of learning comes the phenomenon
we call understanding. The university experience is disciplining
the human intelligence so it can absorb larger and larger quantities
of the world's knowledge and then utilize this knowledge to
provide man with a fuller comprehension of himself, the world
in which he lives, and the universe in which his world moves.
This end result we call wisdom. Thus far man's experience in
the struggle for wisdom has involved the exchange of ideas and
the contemplation of ideas. Fascinating as electronic gadgetry
may be, it is a long way from having proved that it is an effective
medium for the exchange of ideas, and it is further still from the
point where it can be established that it induces contemplation.
But books we know about and until we know better libraries
will be important—and this fact is an article of faith at the
University of Waterloo.

Until a few months ago, Alan P. Gordon was the first and only
Registrar at Waterloo. The present Registrar is Trevor Boyes,
but the Registrar's department as it exists at this writing is the
product of Alan Gordon. Gordon, a young red-headed son of a
Presbyterian minister, of Scottish ancestry, came to the University
with an exuberance and vigour which he has never lost. A high
school teacher for a short time before he came to Waterloo, he has
become wise in the ways of the Ontario educational system. In
the early years, particularly, the recruitment of students was an
important function of the Registrar. Many of the faculty, and
particularly Dr. Ralph Stanton who also had wide-ranging
contacts in Ontario high schools, carried a good deal of the
load, but the Registrar was a key person. Young Gordon travel-
led all over the province; his bouncing vigour almost a physical
manifestation of the spirit of the new university that was Waterloo.

*Nevertheless it is not lagging behind and is currently developing a television
centre under the direction of Delton Schleiermacher.
It impressed high school students and teachers alike, but the canny Scot in Gordon knew only too well that what he said off campus had to be backed by performance on campus.

He was a key figure in the Waterloo scholarship programme, a device designed to lure top-ranking students graduating from Ontario high schools to the new university which had no backlog of scholarships and prizes awarded by friends and alumni over a long period of years; no established academic record; in short, no concrete financial or academic incentive to offer prospective freshmen. To meet this gap the university set up four national scholarships, one award to be granted to a student from the maritime provinces, Quebec, Ontario, and the western provinces. The annual value of the award was the cost of tuition and incidental fees plus an additional $1,000 for the duration of the undergraduate course, provided that the awarding committee felt the national scholar maintained a sufficiently high academic standing. In addition the University set up tuition scholarships. These awards were the value of the tuition and incidental fees. They were awarded to grade XIII students with an 80% average in the final examinations or to any university student with an 80% average in the final examinations of the preceding year. The money for these scholarships was taken from the annual operating budget of the University.

The justification for using public money for scholarships at Waterloo was simply that, without this device, any new university was at a disadvantage in the recruitment of students of high calibre. This is undoubtedly so, but it is of significance that the method of countering this very obvious disadvantage was the brainchild of the faculty and the administration of the University of Waterloo. It is but one more example of the inventiveness and the aggressiveness which pervades this still growing, still highly competitive, still strongly ambitious university. In 1966 the provincial government finally made a ruling on this kind of expenditure and the University is no longer allowed to utilize operating funds to underwrite these scholarships.

What will happen now is still an open question, but during the
years in which the plan was allowed to operate it achieved remarkable results. According to the latest available figures (1965/66) Waterloo attracted a higher percentage of honours students to its freshman year than any except two other long-established Ontario universities. It is perhaps ironic that the University of Western Ontario which only a few years before was desperately worried about the academic acceptance of what was going on at Waterloo should in the 1965/66 term have had only 15% of its freshmen class in the honours category while Waterloo had 27%. In the beginning the scholarship programme undoubtedly was of great help, and although it is still a little early to tell, all indications are that the forced cessation of this programme is not going to greatly affect first-class students in making their choice for Waterloo. The question still, however, remains: Is it fair for any of the new Ontario universities with full-fledged and acceptable academic programmes to be forced to remain at a disadvantage in terms of tuition scholarships simply because they have not been in operation long enough to acquire the kind of private financial support which is the happy position of the older universities? Of course, with the trend apparently moving toward greater governmental assistance in the paying of university fees, this factor may well become insignificant in the near future.

Another area in which A. P. Gordon was very active, especially after 1960, was that of liaison with the high schools. This too was part of the programme to recruit students to the university. In this matter most of the early faculty played important parts. When Waterloo embarked upon this programme most universities in Canada paid little attention to the high schools. Today almost all of them (in the province of Ontario at least) make a real effort to move off the campus into the communities of the province, to establish good relations at the high schools of the province and, hopefully, as a result gain outside respect and interest and, ultimately, more students. Waterloo tends to think of this as another of its “firsts” but, in this case, it is simply a reactivation of a practice which existed throughout Ontario in
the nineteenth century and extended into the early years of the twentieth. The universities of Queen's and Toronto, particularly, at one time sent their faculty members as sort of ambassadors at large throughout the province. The practice fell into disuse until Waterloo came along. It must be recorded that the faculty of Waterloo has always been most co-operative in taking part in a good many school visitations, and through fair weather and foul the members have attended many club dinners, commencement exercises and the like, projecting "a favourable image" of the University. Today Waterloo still holds a preeminent position in this area and part of it is due to the fact that its secondary school liaison officer at present is Dr. S. G. B. Robinson, until recently the very well-known General Secretary of the Ontario Secondary School Teachers' Federation, who developed a very strong interest in what was going on at Waterloo from its early days and, on his retirement, happily came to the University and now directs its contacts with the secondary schools. In addition, the Registrar's office presently has several subdivisions which include an Assistant Registrar, Admissions; an Assistant Registrar, Records; an Assistant to the Registrar, Research Studies; a Supervisor of Examinations and Registration, and an Awards Officer. So, once more, the Parkinsonian thesis goes into orbit.

For a few months A. P. Gordon* acted as the first full-time Assistant to the President at Waterloo (the writer of this book served in a part-time capacity as Assistant to the President, 1962-65). The functions of this post include a direct line of responsibility for alumni affairs, public relations, and the office of information services. The director of information services is J. D. Adams who came to the university in 1959 on a service basis. At that time he was a partner in a public relations firm based in Hamilton. Like a good many others, Adams became deeply intrigued and personally involved in the battle to establish the University of Waterloo and he has remained there ever since. The information services office regularly produces the Gazette.

*Gordon has recently been appointed Assistant Deputy Minister of University Affairs for Ontario.
which is the internal organ for communication, and the *University of Waterloo Quarterly* which keeps the outside world familiar with what is going on at this increasingly active university. In addition he handles all the usual chores associated with this kind of work—the issuing of press releases, handling visiting VIP’s, providing amenities for the many media representatives who are attracted to this unique and bustling university, etc., etc.

The following chart illustrates the complexity of the administration as it presently exists.
This chart, up to a point, represents the usual university structuring. A Board of Governors split into committees to handle specific areas of concern; a Senate which also can set up committees to investigate academic matters and make recommendations, and also faculty and school councils which can present the views of the bodies they represent directly to Senate.

Of more interest are the two overall councils which, it will be seen from the chart, report directly to the President and Vice-Chancellor. These two councils represent a comparatively new approach, but they have evolved out of similar more rudimentary bodies that have developed as the university progressed. Their purpose is to accommodate to an energetic mood which is prevalent on almost every campus in North America—an increasingly strong demand on the part of the academic community of a university to be fully cognizant of and to have a hand in the operation and development of the university with which they are associated. There is no way to tell whether or not the University of Waterloo has achieved a magic formula to solve this problem, but it is highly unlikely. However, it has moved farther in this direction than most other universities. For example, one of the present deans of faculty said not long ago "I am conscious of the fact that I know a great deal more about how things are divided, how money is divided and how we use our resources in this university than many deans in other universities do." The dean said this before the two major President's councils were in full operation. There is a good deal of qualified hope that these councils will improve the situation even more. Both the councils are primarily made up of academic people. They report directly to the President and if their memberships fulfil their functions, then at Waterloo there is a better chance than at most universities for faculty not only to know what is going on throughout the University but to have a strong voice in determining what will go on.

Of course every system ever devised by man has drawbacks. Backing up the somewhat intricate organization of the university both in terms of its day-to-day operations, its policy-making and
its planning for the future is a complicated array of committees and sub-committees. To serve conscientiously on any of these committees or councils takes time, a lot of time. The people who are on them feel they should be there, and yet do not feel that this is their primary function. They are academics in the literal definition of the word. They need time in an age exploding with new knowledge to absorb the developments in their own specific fields of interest; they need time to try out new ideas and to indulge in exciting dialogue with other members of the academic community which is one of the most rewarding experiences for the scholar; they need time to pursue their research in the library or in the laboratory and, if they are to fulfil their function within the university community, they need time to teach. At this juncture in the evolution of universities in the western world it would seem that the conscientious academic knows only too well the meaning of the phrase “so little time . . .”

But it is all part of the struggle and those at Waterloo must at least derive some satisfaction from knowing that they are at a university which is meeting this problem directly and has already taken positive steps toward seeking a solution.
The piper must be paid.

All through the story of Waterloo we have heard voices, solo or in chorus and not always singing from the same music, calling the tune but everyone knows that "he who calls the tune must pay the piper." Traditionally, universities do not accept this homely dictum. The fact that they can—or at least attempt to—flaunt the old saying is a phenomenon peculiar to a free enterprise economy. Faculty and students in a Canadian university find it literally incomprehensible that anyone who pays for the building and operation of a university should expect to have any voice in determining the academic performance of the university. And indeed, there are many university people who believe that the people who supply the money for university purposes should not have any voice in any part of the operating of a university. At this time, this is a particularly sensitive area and what used to be somewhat incoherent rumblings of dissatisfaction are becoming more clearly enunciated almost every day. The position is, in simplest terms: leave the scholars alone; let them make every important decision affecting the university community; and the kind of graduates such a university produces will more than justify themselves and their university in the services they perform for society.

In actual fact, no one knows whether this is so or not because there has never been a university quite like this. The citizens of academia may want it this way but the citizens from whose pockets the money to operate universities comes have never been able to believe that such a method would be in the best interests of the kind of society which they seek to achieve. The scholar will
retort "leave us alone and we will show you a better society" but the financial supporter has yet to be convinced.

The situation is further confounded by the fact that in Canada, in varying degrees, practically all our universities are dependent upon money from the public purse. This is particularly true of the University of Waterloo and the other new universities. Actually, it was this fact which produced the University of Waterloo. But the public purse and the control of it is a cornerstone of the edifice we call democracy. In the final analysis, the collective will of the people in a democracy determines how its money will be spent. Through free elections, the voting populace entrusts the responsibility for the expenditure of their money, in the ways they want it spent, to an agency we call parliament. In Canada, the parliamentary agency which provides money for educational purposes is the provincial parliament. The principle of the control of the public purse by the people is one of our most ancient and valued rights. Kings claiming divine right (and hence a greater ability to know how to spend the people's money than the people themselves) lost their heads. In modern times the equivalent is for a government to be defeated.

How, then, can this ancient right be squared away with a group in the democratic community which asserts it knows how to spend money for its own purposes better than the people who provide most of this money? In a civilization of increasing complexity, this problem does not apply solely to education but it focuses most sharply on this area at the moment. The current budget for the Province of Ontario devotes approximately half the total revenues of the province to the support of education. Today, the valuable and much cherished academic freedom seems to stand at cross purposes to that other venerable and cherished freedom which is guaranteed by the people's control of the public purse.

Here is a sticky wicket indeed. At the moment there is no really satisfactory resolution of the conflict and both governments and universities, while struggling hard to find a solution to the problem do not seem to be making much headway.
Especially in its formative years, Waterloo experienced sharp difficulties as it attempted to build a new university in this uncertain atmosphere. Although the government of Ontario had provided the original $25,000 to do a feasibility survey regarding co-operative education, and although it began supporting the University with provincial dollars, for a good number of years the University did not get sufficient funds to support its rapid rate of expansion. In its first full year of operation the University had expended $813,000 on buildings and land and $253,000 on operating expenditures. The unit cost per student was not quite $1800; of this the students paid $400 in tuition and fees. In other words, through fees the academic community was raising approximately 23% of the required operating revenues and making no contribution to the capital cost involved in running a university. There is nothing startling in this; it is the usual pattern. These figures merely point up how dependent universities are on outside financial support.

In addition to government monies, universities also seek to derive support from the private sector of the economy; from business and industry; from various foundations; from alumni; and from interested individuals.

In 1957, taking the entire range of potential financial support into account, the prospects for Waterloo were somewhat meagre. For example, one of the traditional areas of support—the alumni—did not exist. For the rest, there was “the Waterloo Plan” which had virtually nothing tangible to support it. Little wonder that both the public and private sectors of the economy needed considerable prodding but this Waterloo was more than ready to do.

Within two years they were busy on all fronts.

For the first two years the University had little intimation of the difficulties which the older universities were long familiar with in terms of securing government financial support. The University of Waterloo in 1957/58 requested $500,000 for capital expenditures and $100,000 for operating costs. (This was in addition to the original $25,000 grant for a feasibility study.)
They got exactly the amounts they asked for. The next year the same thing happened again. This time the University asked for $1,000,000 capital and $150,000 operating and once more there was no difficulty—the requests were met by the provincial government. 1959/60 was a different story and, to the distress of the University, it turned out to be a continuing story. In 1959/60 the University estimated its capital costs would be $2,500,000 and they received $1,000,000—a gap of $1,500,000. Up until 1965/66 when the government changed its method of financing capital costs for universities, the spread between what the University asked for and actually spent in capital costs and what it received from the provincial government continued to increase. By the end of its 1962 fiscal year the University had spent $6,162,000 in capital expansion and had received $4,850,000 from the province. By the end of the University’s 1965 fiscal year it had spent (cumulative) $15,369,000 and received $12,350,000 from the province.

It has never been the policy of any government of Ontario to underwrite the total construction costs of a university. Indeed it is a relatively recent policy development for government to become involved to the point where, in fact, its decision can (especially in the case of the new universities) virtually be considered final in terms of whether or not a new building will be constructed. With the need for constant expansion of university facilities and the much greater sophistication of these facilities and hence increase in costs, there is not enough time, even for the old and established universities, to amass the large amounts of private dollars which would be required to keep up with needs generated by increased enrolment. Even though a provincial government may very understandably shy away from being placed in a position where, in effect, it has the power to decide what buildings will be erected at what time on which university campus, the university population explosion has placed government in this position.

At Waterloo the gap which we have noted between actual expenditures and provincial support is in part accounted for by
the fact that during these years the provincial government was resisting having to play the definitive and decisive role in university financing which had been thrust upon it. However, in the case of Waterloo there was another factor involved as well. The provincial government no more than the academic world itself had assimilated the implications of the instant university. There is no doubt that when Premier Leslie Frost talked about the great new university which would one day be at Waterloo he had no idea that it would take form within three or four or, at most, five years. Like everyone else he was thinking in terms of the slow evolution of a university which had been the Ontario pattern throughout the entire history of the province. This time we have a Waterloo first which the University could well have done without. Unlike the new universities which have been created since the formation of Waterloo, this University had to bear the brunt of waiting for a new philosophy of provincial support to evolve.

Of course there was a way out of the difficulty. The Board of Governors could have decided (and at the time no one would have questioned the decision) to exist within its available income. It would have been a safe course, an apparently sane course and one which could have easily been justified, but if that decision had been taken the University of Waterloo would not be anywhere close to what it is, in fact, today. Not only that, but many hundreds—now thousands—of first rate and qualified students would have had no university available to them. The University of Waterloo’s decision to push on even without firm assurance of financial support created urgently required places for deserving students, saved the government considerable embarrassment and, something which even now is not usually realized, gave some of the slower-moving universities in the province time to establish themselves and start to catch up with the sudden phenomenal need for vastly increased university facilities.

This decision was not made lightly but, as we have seen the Waterloo story evolve, it was an almost inevitable decision for
this particular university. There was not a single senior academic on the campus who was not fully aware of the ever-increasing need for university facilities in Ontario. Similarly, there was not a member of this group who did not feel that, within his own discipline, he could make a substantial contribution to meeting these requirements. The same spirit prevailed among the administrative officers of the University and especially in the persons of the president and his two vice-presidents. The chairman of the board of governors, not only continuously in contact with the campus but with a real understanding of the dynamic which had been generated there, had no difficulty in accepting the validity of the faculty’s and the administration’s belief in themselves. The board of governors was no rubber stamp and a good number of its members were in almost as close contact with the campus as the chairman himself. They too had absorbed the Waterloo spirit and, when the chips were down and decisions had to be made, it was this spirit which they backed. They established lines of credit and relying heavily on the agility of A. K. Adlington they manipulated timing and costs so that, financially, the University was always kept afloat even though, in very fact, it was as the old saying goes “up to its ears in debt.” The faculty knew this but they did not panic. Instead, they sought refuge in jest. On payday it was common to hear a professor say “I’ll have to cancel my next lecture so I can cash my pay cheque while it’s still good” or, alternately “This place is in real trouble if it is ever investigated by the Better Business Bureau.”

Once more we are contemplating something that is almost miraculous. Financially, the shakiest vessel ever to sail through the academic waters of Ontario never had a panic, a mutiny or a deserter. People left, as they always do, but never once on the grounds that they had lost confidence in the financial stability of the University.

In the long run, this harrowing experience has probably been good for the University. It has not only given it confidence in itself but it is now becoming apparent that it has earned an
enviable reputation in both government and business. The word is “If you want things done, the University of Waterloo is the place that can do it.”

From the beginning the board of governors had realized that the University would have to be aggressive in seeking support from the private sector of the economy. It has already been mentioned that very early it planned and got under way its first fund-raising campaign. It will be remembered that this campaign was carried on before the University actually had its charter and represented an effort to get financial support both for Waterloo College and the Associate Faculties. The campaign was geared primarily to the co-operative feature which had been introduced at Waterloo. In modern advertising parlance this was its “unique selling point.” As a result, under the direction of the professional firm of G. A. Brakeley & Co. Ltd., the first campaign produced approximately $1,000,000. Then the anticipated federation collapsed and, by agreement, $200,000 were turned over to what had by this time become Waterloo Lutheran University. Since most of the money was earmarked for development of the new campus the loss of this sum represented a very serious setback for the University at that period.

In addition to the fund-raising campaign the University prior to 1960 had received other significant support. Appropriately enough, the first major contribution to the development of the University came from a corporation which had a long association with the City of Waterloo—Joseph E. Seagram & Sons. As early as the fall of 1956, discussions were under way between representatives of the Associate Faculties, the City of Waterloo, the Kitchener-Waterloo Dutchmen Football Club and Seagrams. The idea was that these groups would combine in a joint effort in the development of a football field and track near the site of the baseball field of Waterloo Park. What ultimately emerged is today known as the Seagram Stadium and Gymnasium. The corporation donated $250,000 toward the erection of this facility; the land on which the facilities are built came from the City of Waterloo. The original idea was that the Kitchener-Waterloo Dutchmen football
club would hold its home games here and through this revenue a good deal of the maintenance costs would be provided. Altogether the stadium and gymnasium cost approximately $285,000 which did not include either the land or a system of lighting which was provided by the City of Waterloo and conservatively valued at more than $100,000. The stadium and gymnasium was opened formally in the summer of 1958, but has been in use since the fall of 1957. Although the University has now outgrown these facilities, and a new athletic complex will soon be constructed on the campus itself, this first substantial gift not only has provided a much needed university service from the beginning but it also was excellent for the morale of the University, eagerly and then desperately seeking for outside financial support.

In addition, the fact that the City of Waterloo became involved at that early date was an excellent augury of the kind of support which the University has always received from its home municipality. Since 1959 the University has received an annual grant from the City of Waterloo. Originally this was based on a levy of $1 per population unit within the corporation and in the first year the University received $18,350. This arrangement has continued ever since but in the past three years a percentage of the money set aside for the universities on a per capita basis in the City of Waterloo has gone to Waterloo Lutheran University. At the present time the University of Waterloo is receiving approximately $20,000 from the city. The next year—1960—Kitchener also decided to support the University. It did not work on a per capita basis but in that year provided the University with $43,000. It now also uses the $1 per capita system but, like Waterloo, a portion of the money goes to Waterloo Lutheran University. At the present time the University of Waterloo is receiving approximately $65,000 from the City of Kitchener.

Outside these two municipalities the University has experienced considerable reticence on the part of neighbouring municipalities to support it. The first concrete aid in this area came from the County of Huron in 1964 when it provided $600 in scholarships and bursaries for students from the county
attending Waterloo. It now offers $1,200 per year for this purpose. In 1966 Oxford County donated $1,000 to support the library and for 1967 is committed to the same amount plus $800 for scholarships. In the same year Middlesex County began offering two $150 scholarships and Perth County a $100 scholarship. The latest commitment is from Lambton County for two scholarships of $50 each. The City of Waterloo now also offers an entrance scholarship of $400 to a student normally resident in the city who has been accepted by the University in a course leading to a degree. Another interesting programme is that established by the Kitchener-Waterloo Council of Friendship which offers scholarships totalling $1,500 to first-year students who were born in a non-English speaking country but are now residents of the Kitchener-Waterloo school area.

On the whole, while the University has had strong support from the Twin Cities, financial assistance from the broader community which it directly serves has been rather slow in coming. Although the University now brings millions of dollars into the area every year and although the citizens of the district are tremendously proud of the University and its accomplishments, dollar support has been under expectations. This is even more surprising inasmuch as from the beginning the University developed an extension programme, first under the direction of Dr. G. Elmore Reaman, and now under the directorship of A. A. Beveridge, which was almost exclusively community oriented. Unlike most Ontario universities, Waterloo does not offer through its extension department a programme of academic courses by which a candidate can earn a degree by correspondence and attendance at summer school. It has been the University’s position that this particular area is more than adequately covered by existing programmes in other provincial universities. The department does have a range of courses offered by several academic departments of the faculties for which credits can be accumulated towards a university degree. These courses can work into the programmes of part-time students who are enrolled in various university departments. The University also has a programme for upgrading the
qualifications of secondary school teachers. This is a very specific service, much needed in the province and was instituted with the co-operation of the Ontario Secondary School Teachers’ Federation. Waterloo is the only university in the province where this particular kind of programme is available and it has been most successful.

For the most part, however, the extension or adult education courses have been designed to serve the needs of the community. These needs roughly break down into two main areas: business and community service. The underlying philosophy of the courses offered is the “updating” and “refresher” approach. Many courses are offered including the C.I.M.A. and R.I.A. programmes. As early as 1961 sixteen hundred people in the area were enrolled in the courses offered by this department. The present enrolment is well over 2,000. The programmes are vital and timely and represent the formal channel through which the unique skills and knowledge of the academic community can be made available to the community at large. In addition, the expertise of the Extension Department is available to off-campus organizations and associations who, with the department, wish to co-sponsor various types of conferences and seminars. These are usually scheduled during the summer months.

Perhaps one exception to the general approach to extension at the University of Waterloo should be noted in the Centre for Continuing Studies in Marketing under the direction of Roydon M. Barbour, formerly a well-known management consultant in Toronto who now devotes most of his time to the development of marketing courses and seminars at the University. Marketing courses are also offered by the University of Waterloo in Toronto. The Centre presently offers fourteen courses.

Despite these services both to the community and further afield, despite its unusually close relationship with industry and despite its unique record of achievement and service to higher education in the province, the University of Waterloo still has not attracted a great deal in the way of substantial gifts. By 1962 it recognized
that this is a field which requires assiduous and continuous cultivation and in that year a director of development was appointed. He is J. O. Hemphill, many years a business executive in Waterloo and very active in community affairs. Jack Hemphill is the kind of man whose personality exudes warmth and goodwill but at the same time he is a careful and meticulous executive. His dedication to the University of Waterloo is a typical example of how the University can reach out into the community and bring in the services of a man who might otherwise be enjoying most of his days on the golf course or the curling rink. Jack Hemphill has made two very important contributions to the University. Shortly after he came to the campus he was deeply involved in the second fund-raising campaign which was launched in September, 1962. While again G. A. Brakeley was the professional firm conducting the campaign, the University’s involvement was the responsibility of Hemphill. Now, as the University plans for its third fund-raising drive he again will shoulder this difficult burden.

Perhaps of even more importance from a long-range point of view is the fact that the formation of an alumni society for the University of Waterloo owes a substantial degree of its success to Jack Hemphill. The average university alumnus these days has become so used to appeals for funds from his alma mater that he almost automatically develops a hard line of defence. It would have been natural for the small group of alumni of the University to have been extremely suspicious when the director of development began actively to seek the formation of an alumni association. In fact, this is exactly how they felt but they quickly learned that, while Jack Hemphill quite frankly had a specific job to do, by his very nature he was the kind of man who could make them proud of the fact that they had graduated from Waterloo. His unobtrusive geniality has earned him hundreds of friends amongst today’s Waterloo alumni. Beginning with a small group located in the Twin Cities, an Alumni Association was formed with Karl Reichert as the first president. By the end of the year, at Homecoming Weekend, November 9, the group was sufficiently organized to have its first dinner with ninety-eight graduates present.
From this small start the association has become a strong extension of the University. It now has a regular section of the University of Waterloo Quarterly called the “Alumni Courier” containing news of Waterloo alumni from all over the globe. The present president is Nick Hathway and Jack Hemphill is the executive secretary of the association. It presently has many projects under way and will play a very important role in the fall of 1967 when the University has plans for an elaborate programme to celebrate its tenth birthday.

While still in its formative years the University received its first bequest, from the estate of the late Ford Kumpf*—$15,000 plus a share of the residue of the estate on the death of Mr. Kumpf’s widow. The family of P. R. Hilborn, veteran member of the board of governors, has recently made a substantial sum available to support a reading room for the Water Resources Research Institute. As its centennial project, B. F. Goodrich Canada Limited presented a $30,000 research library to the University. As a memorial to the President’s wife who, from the beginning of the University until her tragic death, had, in her modest and unassuming way, been as closely identified with the founding, growth and development of the University as the President himself, a residence for seventy-five graduate and senior undergraduate women students has been planned to be known as the Minota Hagey Memorial Residence. To date faculty and staff have contributed $25,000 to this fund and $50,000 has been donated to the University for this purpose by Mrs. A. R. Kaufman, wife of still another veteran member of the board, the well-known industrialist, A. R. Kaufman. With this support, the plans for the erection of the residence can be realized.

There have been other personal gifts to the University whose donors wish to remain anonymous at this time and, of course, a good number of very large and substantial contributions have come to the University through its fund-raising drives from major industry, foundations and individuals. It should be recorded here

*A member of the Board of Governors, 1959-1960.
that much of the most substantial help for the University in its fund-raising appeals has come from the Twin Cities area itself.

Now with an unprecedented ten-year history of growth, development and contribution to higher education in the province, the University of Waterloo surely must stand out as a particularly appropriate institution to be supported from the private sector of the economy. Already the government has set an example and by special arrangement is helping the University to liquidate the debt it deliberately accumulated in the early 60's in order to continue expansion at a time when provincial funds fell far short of actual needs. There is a reasonable expectation that private sources of university support will also follow this example. No one knows better than the governors of the University themselves that it takes time for a university to achieve a reputation and earn the recognition which it deserves. That time would now seem to have been reached.

The University has never cut back on its direct services to the community in which it is located; the University made a major contribution toward the solution of the student population explosion; the University is, perhaps more than any other, directly in tune with the social and economic needs of the province and the nation, and its contribution toward meeting these needs is now there for all to see. With strong immediate community support, with vigorous alumni, with a record second to none in its awareness of the social and economic needs of our society and, above all, with ten years of adventurous but sound academic achievement behind it, the University has earned at least the right to hope that private support will match present government support so that for the first time in its history the University can channel all the skills it has acquired, the acute awareness of contemporary needs which it has developed and the magnificent facilities which, under extreme difficulty, it has created to move forward along the exciting and productive course it has charted for itself without the frustration and time-consuming diversion and expenditure of energy which arises from insufficient financial support.
AND STILL THEY COME

The University properly began when the first students arrived in July, 1957; it continues with a student body which in the near future will be approximately a hundred times larger than the original seventy-four. With this astonishing growth it is no longer possible to sit down with a group of "typical" undergraduates and from them get an accurate appraisal of what the University of Waterloo experience is. Instead of one course there are many; instead of one faculty there are four; instead of all freshmen there are students ranging from the first year to those working on the final paragraph of the Ph.D. thesis. Yet there are still some common factors. Taking a cross-section of the student body one would find that the majority of students on campus today are there for much the same reasons which motivated the first group. Some are there because their families want them to go to university; many are there because they believe that university training is a requisite both for personal fulfilment and for the achieving of a successful career in whatever fields their interests may lie. Most of the students presently at Waterloo are not there because it was the handiest, the cheapest, or the easiest university to get into. In actual fact Waterloo is none of these things. The students at Waterloo today primarily are there because throughout its first ten years Waterloo has consistently kept and burnished its image as a dynamic, exciting and adventurous university. In the language of the contemporary undergraduate, Waterloo is "with it." Although it may not appear this way to all of those who have been involved in student affairs at Waterloo in the past ten years, the evolution of the student body has been intimately incorporated.
into the university's total struggle for identity. There is a remarkable parallel between the struggles of the students at Waterloo and the other conflicts which we have contemplated in this narrative. It is indeed a happy circumstance that the students at Waterloo were and are as aggressive and strong-minded as the faculty and the administration.

Perhaps the simplest way of delineating the contribution of the students to the formation of the personality of the University is to trace the evolution and the convolutions of student government on the campus.

We have seen that in the first year the earliest students found their identity in the fact that they were part of a great new experiment, not in the assumption that they had joined or become part of an established institution of higher learning. Today's student feels much the same way. At no time have the students at Waterloo seen themselves as committed to or enslaved by some amorphous entity called "the great traditions of this University." In other words, at Waterloo nothing is sacred. Because as an entity it is younger and less inhibited by caution, the student body often is more straightforward in taking up strong positions than any other segment of the University and, troublesome and sometimes embarrassing as this may be, deep down in his heart everyone intimately connected with the University says "thank God for this kind of student."

As a result of this feeling of being a part of a stimulating new experiment, the first students refused to be absorbed by the existing student group at Waterloo College. Up until 1959 the student organization as far as the Associate Faculties was concerned was the Engineering Society. In 1959 with the prospect of federation almost accomplished, an attempt was made to bring together the two student bodies. A University of Waterloo Student Council was formed in the fall of 1959 and combined with the Student Council of Waterloo Lutheran University. They first met on October 19th. The next month the Student Council of the University of St. Jerome's College was added to the combination. What this grouping might have turned out to be is a matter of
pure speculation because, as we have seen, the proposed federa-
tion collapsed and the union of the three Student Councils had not
been in existence long enough really to do anything. However,
those who can remember back to those days recall that even then
there was no real spirit of unity. Just as at the administrative and
faculty level, so too at the student level there existed a division
which grew out of two differing concepts of what a university is.

After the breakdown and subsequent withdrawal of Waterloo
Lutheran University, student affairs were not properly organized
until the fall of 1960 when, on October 12, a meeting of the Student
Council of Waterloo University was called to organize some kind
of structure for student government. Now they had an organiza-
tion of their own, but to a large extent it was merely an extension
of the Engineering Society. It will be remembered that at this
point the student population was almost entirely comprised of
engineers. The first presidents of the Student Union Council were
from engineering and here the co-operative system caused
considerable difficulty. An engineering president could not be on
campus for more than (at that time) a three-month period, a
factor which did not lead to very efficient administrative contin-
uity.* It was not until 1962-63 that the Students’ Council
acquired a president who was on campus throughout the tradi-
tional academic year. He was John Braun.

Through these formative years the student organization largely
occupied itself with matters which were of direct and immediate
concern to the student body, such as an attempt to get a constitu-
tion for the organization, the setting up of a system of athletic
awards, the development of various undergraduate clubs, decisions
regarding what the University of Waterloo jacket would look like,
struggles with finance, etc. As might be expected, the organization
of social events dominated the activities of the organization, but
one other continuing preoccupation carried right through from the
earliest years of the university—the need for a Campus Centre.

*Between the fall of 1960 and the spring of 1962 Student Council presidents
were: Jack Buchanan, Paul Koch, Paul Dirksen, Richard Hamilton and,
again, Paul Koch.
We have seen that one of the first acts of the original Engineering Society was to levy a fee against all students to be set aside to provide funds to erect such a facility. This carried on through all the formative years regardless of what form the student government took. By 1962 over $30,000 had been set aside for this purpose. By this time what the University would become was clear and the kind of Campus Centre which would be required obviously could never be realized by student financing. In that year the Student Council decided to contribute the funds accumulated to date to the fund-raising drive then in progress, with the proviso that when a Campus Centre was built this specific money would be used for financing some special feature in the building. Of course this was a right decision and the Campus Centre, which is scheduled for occupancy some time in 1967, is a building of 68,000 sq. ft. costing $1,800,000. Perhaps the decision of the students to make a direct contribution to a university fund-raising drive is another Waterloo first; at least this writer does not know of any similar action on the part of students in Canada.

By 1962 all the faculties within the University were established and well under way. Although engineering still dominated, the student body was much more representative. Like the University itself, the Student Council had emerged from the area of attending to a multitude of necessary but picayune details and had become cognizant of broader matters of concern to students. They still did not have a constitution, but most of the original areas of concern were settled and working reasonably well. Indeed, they were working well enough for the Student Council to feel that they were valuable components of university life and should be supported more strongly. They went to the administration and asked for a larger fee to support existing activities and develop new ones. The administration responded by suggesting that they bring in some outside help to assist them in developing a philosophy of student activities and a programme which would result from it. Up to this point, the only official liaison which existed between any students and the administration was the office of the Dean of Women. The first Dean of Women was Mrs. Dorothea
Walter who was not only an early member of the department of romance languages but had an extensive background in international affairs. Experienced, sophisticated and fluent (in several languages), Dean Walter was a strong advocate, friend and counsellor for the girls on campus but, by the nature of her office, was not in a position to speak for the student body as a whole. As a consequence of these discussions, Claude C. Brodeur came to the University as a part-time member of the department of philosophy and as administrative assistant, student affairs.

The importance of Brodeur's contribution to the evolution of student activities as they are now constituted at Waterloo cannot be overestimated. For the first time there was a man on campus informed and wise in the ways of students and how they might be organized. Up until Brodeur's arrival the students, and in fact the University as a whole, had been operating almost in isolation with little reference to or knowledge of what was happening in the student world outside Waterloo. Brodeur, with his knowledge and understanding, was the catalyst which generated the kind of action which is now characteristic of the students at the University.

Both before and after he took on his task at Waterloo, Claude Brodeur made it a point to develop and maintain wide-ranging contacts with other universities which enabled him both to get an accurate reading of how student feeling was developing in North America and how universities were responding to the new mood. Today it is more or less public knowledge that university students have different and—for some—more troublesome attitudes than their predecessors. In our civilization the student no longer thinks of going to university as a privilege but as a right, a right which he has earned by proving that he can meet the standards for admission which the universities themselves set. Today's university students have been told *ad infinitum* that they are the bulwarks of the free world; that they almost have a moral obligation to carry on with further academic training for the sake of their nation and our civilization; that without their skills our economy cannot survive or our social structure progress. So it goes. Little wonder that the modern university student, having
been told he is so important, should also assume that he has the right at least to be heard when plans are being considered which will affect both the way in which he is trained and his way of life while he is undergoing the university experience. The universities of the western world are a long, long way from having found a solution to the student's demand that, like every other citizen in a democracy, he has the right to determine (or at least contribute to a determination of) his own destiny.

When Claude Brodeur came to the campus of the University of Waterloo he was far more aware of the changing mood of the contemporary student than anyone else at the University. His role had to become almost schizoid. He had a responsibility to the students whom he understood and sympathized with and, at the same time, he had to be the bearer and interpreter of what to a good number of university administrators and teachers was just plain bad news.

The interesting thing about the student situation at the University of Waterloo in 1962 is that although it manifested this new mood of student energy it had not learned about it from outside. At Waterloo the demands by students that they be heard, have a considerable right of self-determination and make a contribution to the University generally were all manifestations whose origins can be traced back directly to the first students at the University. In ways which perhaps only a profound sociological study could determine, this group had generated within itself attitudes which, if anything, were more firmly formed than in their contemporaries at other universities. As communication between Waterloo and other student bodies developed it was more a confirmation than a surprise when the Waterloo students found that their colleagues in other universities were developing similar views.

In more concrete terms, the students were struggling to act more responsibly within their existing orbit and to expand their influence into areas which they considered to be of legitimate concern to them. In 1962 the Student Council, under the skillful guidance of Claude Brodeur, concerned itself with an interesting group of specifics.
The break in 1960 which resulted in the formation of the two universities within two blocks of each other inevitably translated itself amongst the student bodies in terms of the usual and expected college pranks, with perhaps a sharper undercurrent of feeling than is usually found in inter-university rivalry. Some of these pranks bordered on the dangerous and the malicious. At the instigation of the Students’ Council of the University of Waterloo, negotiations were opened with the student body at Waterloo Lutheran and ultimately an agreement was reached under which irresponsible damages caused by one student group on the other’s campus could be negotiated and paid for.

In the same year the Student Council began its programme of student aid, a system whereby, within its limited means, the student body itself could help needy students.

These were mature acts, a very real manifestation that the students recognized that they had responsibilities and were willing to face them. On the other hand, they made their first significant move toward influencing university policy. Like other mortals, students get sick, have accidents which need immediate attention. Up to this point the University provided no health services and there was no indication that it had ever crossed the minds of the administrative officers that such were required. The students moved to make their needs known and to get some action. Here, as was usually the case, Brodeur was the middle man, and ultimately the University took the first steps which have resulted today in quite adequate health services which, in the near future, will be improved still more.

One of the most interesting examples of the change of feeling amongst the students which occurred in 1962 can be found in the files of the student newspaper (then known as the Coryphaeus; now changed to the Chevron) which, up to this point had been a not very impressive example of a typical small college paper. This was the year that a young man called Sid Black became the editor and he, reflecting the mood of the student body, dedicated the year to turning this student publication into a genuine, respectable and respected newspaper. On the foundation which
Black built, an ever-improving university paper has emerged, and as the vehicle for the public expression of student opinion, it is now a major factor in the field of student affairs.

The next year under the presidency of Jim Kraemer the Student Council became a more sophisticated body, began operating its meetings more effectively, started using a system of committee reports and generally formalized its procedures. The most important single thing the Council did was, in September, 1963, to make a firm request to the University that students be included to participate in all policy deliberations which either directly or indirectly related to the interest of the student body. It cannot be reported that the University immediately understood this request or that even now students and administration think in quite the same terms, but a move was made in this direction almost immediately. In another context it has been recorded that when a president’s committee was set up to study and plan for university residential accommodation student representatives were included for the first time. This procedure has carried on in several similar committees ever since.

Claude Brodeur left the university in the spring of 1965 in order to carry on his own graduate studies proceeding to the Ph.D. degree in philosophy. By that time he could look back to 1962 and see that in under three years the student body had become an organized, vibrant and effective power within the University.

Besides the developments already outlined, Brodeur had also been the agent through which the students’ desire to have formal counselling services made available to them had been realized. In addition, the students’ views now had an effective channel through which they could reach the administration on a wide variety of matters concerning them which included the problem of the book- store, the state of food services, athletics, student housing and student discipline. By this time the students had well formulated views on all these subjects and in most instances they participated in discussions which sought to solve the problems. In addition, the Student Council had weathered a considerable tempest which arose when Jim Mitchell and several other members of the incom-
ing executive of May, 1964, found that because of some academic rulings they would not be able to take office. There was considerable feeling that this was a deliberate move on the part of some of the faculty to disrupt the now strong Student Council. It was handled with such skill and understanding by Brodeur and certain other members of the administration that it is perhaps not even now fully realized how close the University came to a most disruptive situation through the summer of 1964.

That October, Richard Van Veldhuisen took over as president of the Student Council. He turned out to be a most happy choice, bringing a strong sense of stability and order into an area which was still inflammable. Van Veldhuisen had the capacity of being able to get to the core of trouble. All through these years the Student Council did not have an updated constitution which fitted the role which had emerged for it. Van Veldhuisen determined that this must be the starting point to establish student affairs on a firm basis. He took his time, involved not only students but faculty and administration and eventually was able to produce a constitution which reflected the needs of the students and provided an organized system whereby these needs became incorporated into total university policy. Amongst other things, the name was changed from the Student Council to the Federation of Students. The objects and purposes of the Federation are worth recording:

(1) The promotion of the welfare and interests of the students of the University of Waterloo.

(2) The promotion and co-ordination of student participation in athletics, cultural and social activities.

(3) The maintenance of communication between the student body and the authorities of the university.

(4) The representation of the Federation in matters affecting the common interest.

(5) The encouragement of inter-university co-operation and communication.

With these objectives clearly spelled out from this point the Federation has concerned itself with their implementation.
The first step was to give the Federation financial independence. It applied for and received permission from the Board of Governors to increase fees and at the same time it set up an office of student affairs on a businesslike basis. In order to do this, Paul Gerster was appointed first administrative assistant to the Student Council and now serves as Secretary-Treasurer of the Federation of Students. He was provided with adequate staff to administer the wide range of activities which are now under the control of the Federation of Students. Gerster, just graduated from the University of Western Ontario when he was first appointed, was considered by some to be too young. Happily, while he is undoubtedly young, he very quickly earned the confidence of the senior officers of the University with the result that the incumbent of a key position in student affairs is able to identify with the student viewpoint and present it with authority to the other segments of the University.

By June, 1965, all the activities which had been generated in the past three years by the students had achieved a size and importance which required that they be incorporated into the administrative structure under the aegis of a senior administrative officer. To accomplish this, a new post was created in the University—that of Provost, Student Affairs.

In the beginning, this office was included in the functions which were the responsibility of the Vice-President, Academic. In the recent reorganization of the University the areas which the Provost looks after are considered of such significance that he now has a direct line function reporting to the President and Vice-Chancellor. Under the Provost, counselling services, creative arts activities, the dean of women, liaison with the federation of students, health services, housing services, and overseas students activities and residence administration are administered.

It is significant that almost every one of these important university functions has been generated by the students themselves at the University of Waterloo. They were the ones who felt the need, who learned how to make the need known effectively so it would be recognized by the administration and action taken. In
AND STILL THEY COME

many of these areas they have a dominant voice and in all of them they have a direct relationship with the Provost who can almost be considered as the students' administrative officer.

The man chosen for this important task was Professor W. G. Scott, one of the original members of the sociology department when it was formed in 1961. There is general agreement on campus, both amongst students and other segments of the university community, that Bill Scott was a most appropriate choice. Like so many other senior members of the University, Scott had an industrial background as well as academic qualifications. His training in sociology is most appropriate, but it is his personality which is the real asset in the work which he has to do. A man of great sensitivity, Scott is involved in an area where human qualities are the dominating factor. When Scott thinks of his responsibilities to students he thinks in terms of individual students, human entities grouped together in the unique atmosphere of a university. The challenge of his job lies in the fact that the individuality of the student must be recognized. In the final analysis it is the individual welfare and well-being of each student which is the Provost's responsibility. To perform his function effectively he must have the capacity to utilize all the mechanisms which have been set up by the University to produce a good atmosphere in which scholarship can flourish and at the same time ensure that the individual scholar never becomes merely a cipher in a complex organization which would be judged by total rather than individual achievement. This is probably one of the most difficult jobs in the entire University. To be successful in it a man must know and understand the University of Waterloo dynamic, the genesis of the student attitudes and have the wisdom to comprehend that these are not entities in themselves but the product of a great mass of individuals. Bill Scott, by nature and training, has proved that he is the man for this job.

Today, in comparison with almost any other Canadian university, the University of Waterloo has a more lively interaction between students and faculty and administration, a wider ranging programme (generated by the students themselves) to look after
their needs, and a strong voice in determining how these needs will be met. In addition to its well organized, representative student government, health and counselling services and housing services, the students at Waterloo virtually control the activities of the creative arts board which produces programmes in music, drama and art for the edification and enrichment of the total university community but primarily for the student body. This board is under the direction of Mr. Paul Berg, a long-time associate of the University and its first director of music. The University pays the operating cost; the Federation of Students pays the programme costs. Many of the activities generated by the creative arts board take place in the Arts Theatre, but any other available facilities at the University are put to use as well, and when the open air amphitheatre, which is part of the new engineering lecture building, is completed, it is hoped that a good many programmes will take place there. The gallery which adjoins the Arts Theatre is the centre for art activities which are under the direction of Nancy-Lou Patterson. Music activities are directed by Alfred Kunz, and drama by Earl Steiler. In addition, outside directors are brought in on a regular basis. The creative arts board also sponsors lecture series, film society and so on.

Altogether, student activities at Waterloo are extremely well developed, not just in terms of the University’s short history, but in comparison with those of any other Canadian university. Discipline is still not codified and is still handled on an ad hoc basis by the Provost himself.

One other area is not completely satisfactory. Perhaps because of the fact that the Seagram Stadium & Gymnasium has not been on campus, the athletic programmes at the University seem to have developed almost in a world of their own. There is an active athletic programme which has been under the direction of Carl Totzke from the beginning, including a wide range of both intramural and intercollegiate teams. But somehow there are constant rumblings amongst the student body. They feel that this is definitely an area in which they should have control, and yet the athletic directorate does not give them this power as it is currently set up.
On the other hand, those students who are interested in athletics seem to have no complaints. It is an open question as to whether or not a reorganization of the administration of athletic facilities would induce more student participation. It is hard to determine whether the present uneasiness about the administration of athletics is merely an extension of a desire for more power on the part of the Federation of Students or represents a situation which is actually not quite satisfactory. With the new athletic facilities now under construction being erected on campus, deliberately placed close to the Campus Centre and the Student Village, it is reasonable to predict that no matter how the activities are administered, they will greatly increase and become more significant in student life than they have been up to this point.

From time to time the administration of the University of Waterloo has been charged with being indifferent to the welfare of the students. In the light of what has been accomplished this is hard to substantiate. The fact of the matter is that students at Waterloo not only have programmes and facilities equal to those on any Canadian campus, but they have had a far greater share in developing their activities, determining their own status, and asserting their needs than almost any other student body in the country.
In the time it has taken to recount the story of the conception, birth and growth of the young giant that is now the University of Waterloo, a year, metaphorically, has passed. Carl Pollock is the chairman of the board of governors now and Ira Needles is the chancellor. As we have seen, the deans have either been replaced, are about to be, or faculties have been restructured. Again within the winking of an eye many new and significant things have occurred at Waterloo.

As the current convocation ends and the procession reforms (in reverse order) and the officers, faculty and students emerge into the bright May sunlight and wend their way to the now well-developed though still growing campus, they look both literally and figuratively to the future. As they move on to the campus the horizon which is before them is Columbia Street and over seven hundred acres where the next major developments at the University of Waterloo will occur.

The achievement of a degree is a great thing. The achievement of building, from scratch, a great and large multifaculty university within a decade is a great thing too. And yet not a single member of the graduating class regards this important day in his life as anything more than a specific moment in time when he can say to himself now you are ready to take on greater things. The same thing applies to the University.

Its first ten years have been magnificent. As the University (which includes students, faculty, staff, administrative officers, governors and supporters) pauses for a moment to contemplate
this milestone it remembers the past with fondness, respects it for the lessons it has taught, but is primarily preoccupied with what comes next.

The story of Waterloo’s first ten years shows very clearly that at no time was its struggle for survival and growth so all-consuming that it did not constantly assess itself with a view to being better in the future. Just as the freshman on the day of registration thinks about the day he will graduate and what he will do then, so too has the University of Waterloo in its first decade been constantly projecting into what it will be like in the next ten years. Just as we have seen individual departments and faculties audit themselves and plan and implement desirable changes, so too has the University as a whole given constant and considerable thought to the same problem.

In 1965 T. L. Batke, Academic Vice-President, produced “A Review of the University’s Growth and Some Academic Planning Considerations for the Future.” In this most revealing document, Dr. Batke traces the historical background which has established the planning pattern for the University, examines the current status of planning, the possibilities of future growth and makes some recommendations. Batke is particularly fitted for this task inasmuch as he has been a representative on the Ontario “Presidents’ Research Committee” since 1963. This committee has access to the most complete information available regarding future university needs in the province. Its alert membership exchange ideas to the mutual benefit of the universities they represent. Batke then, both as a Waterloo “original” and as the senior officer of the University most immediately aware of future projections of academic needs in Ontario, undoubtedly becomes a key figure in the future planning of the University of Waterloo.

In the past ten to fifteen years attempts to project university requirements for the Province of Ontario have had to be modified so many times that one is naturally slightly sceptical about projections into the future. However, they are the best available guideposts and represent the best collective judgment of those who have the most experience in university matters. At the present
time it is estimated that the university population in Ontario will probably reach one hundred thousand by 1970 (it was fifty thousand in 1965) and that by A.D. 2000 the university population may well be somewhere between two hundred thousand and two hundred and fifty thousand. With these projections in mind, Waterloo must determine its role, and especially decide what it will be in the period between 1970 and 1975.

In 1964 the University was asked by the Bladen Commission to project its enrolment up to 1975 and at that time came up with a figure of approximately twelve thousand five hundred students. However, since that time a great deal more research has been done and it is currently estimated that if the University of Waterloo were to continue to enrol students under its present admission policies those who would apply and be eligible would probably exceed twenty-four thousand students in 1975. A possibility such as this raises many questions but two are basic: will the University be provided with sufficient funds to construct facilities equal to its present standards to accommodate such a vast increase in the student body? And, secondly, even if it were financially feasible is it academically desirable that the University attempt to meet an almost fivefold increase in enrolment within the next eight years?

In an academic community, the second of these questions ought to be, and at Waterloo it is, the more important. At the present time the President’s Council on Planning and Development is constantly addressing itself to finding an answer. While far from having made any final commitment yet, the Council’s current thinking was revealed in an address to faculty and staff by the President on November 30, 1966. It would seem that, at this point at least, the University feels that a programme of controlled growth between the present and 1975 is the most desirable and the most feasible policy. If followed, the enrolment by 1975 would be slightly more than envisaged in 1964—somewhere between fourteen and fifteen thousand students.

This “controlled” expansion averages out to a student increase of approximately twelve hundred students per year. On the basis of per student expenditures and its commitment to the province,
the University requires at least $10,000,000 from the private sector almost immediately if it is to carry on an expansion programme which it considers desirable. Also involved are expansion plans which ensure maximum academic excellence. This in turn means that the University cannot contemplate a growth rate which is not adequately supported financially both by the public and private sectors of the economy. In order to determine how it will proceed in its next phase of growth, the University first must formulate its philosophy of academic development and relate this to plans for physical development. The President has asked the Vice-President, Academic, and the deans to produce concrete recommendations and plans which embody the concepts of higher education they consider desirable for this University. When this has been accomplished, their findings will go the President’s Council on University Planning and Development. Many at the University have come to the conclusion that it eventually can achieve a total growth of somewhere between twenty-five and thirty thousand students in the next thirty years and at the same time produce outstanding academic work if the growth pattern is carefully and well designed.

All this is still very much in the area of examination, speculation and cogitation. The most important determining factor in Waterloo’s future lies in the hands of the class which has graduated today, its predecessors and those who come after it in the immediate future. The ultimate test for Waterloo is how its graduates perform and how responsibly and creatively they fulfil their roles in society.

In watching how this University has come to its present full strength we have been able to identify specific ingredients which go into the experience of the Waterloo graduate. From the first he has been conditioned to realize that regardless of the exigencies of the moment there is no excuse for mediocre academic performance. He is conditioned to perform with excellence regardless of the handicaps which may confront or surround him. His Waterloo experience has also conditioned him to be fully aware of the world around him, to face its challenges aggressively and, at the
same time, to live in tolerance with his fellow man. And perhaps above all, he emerges from the University realizing that only the first stage in the cultivating of his mind has been accomplished and he can expect to continue, either formally or informally, to keep disciplining and developing his intelligence both for his own successful survival and for the benefit of all that is best in civilization.

This is the Waterloo man who emerges from every convocation—a man with the confidence and competence to know and believe that the struggle availeth.
APPENDIX

The Armorial Bearings and the Mace of the University of Waterloo

I. Armorial Bearings

1. The official colours of the University of Waterloo are gold, black and white. The coat of arms for the University of Waterloo as adopted in October, 1961, is:

Arms: Or, a chevron sable surmounted by a chevronnel argent between three lions rampant gules.

Crest: Between two maple branches in saltire a trillium, displayed and leaved, all proper.

Supporters: Two laurel branches joined in saltire below the shield, proper.

Motto: Concordia Cum Veritate.

2. Note—

The combination of a gold shield with black and white chevrons allows the use of all three of the university colours. The double chevron design is unusual and the only similar example in *Burke's Peerage* is in the shield of Lord Kitchener of Khartum.

The three red rampart lions, signifying strength and courage, are a reference to the Battle of Waterloo in which the Duke of Wellington defeated the Emperor Napoleon in 1815. Both Wellington and Waterloo counties gained their names from this battle. The arms of Wellington feature a red rampart lion on a gold field. In addition the arms of Scotland also display a red rampart lion on a gold field.
The German settlers of this area are commemorated in all four colours of the shield. The original Waterloo is located in Belgium and the colours of Belgium are red, black and gold. In addition, Blücher, the Prussian general whose armies contributed significantly to Wellington’s victory, is represented by the black and white chevron since the Prussian colours were black and white.

II. *The Mace*

The mace, which weighs about fifteen pounds, is made of silver except for a black insert of ebony on which are mounted the arms of the University and of the Province of Ontario. The inscription reads “In Memory of Stanley F. Leavine.”

*The symbolic theme* may be described as follows:

The fundamental concept is unity and diversity and tension in the creative intellectual process that strives to bring forth a new individual.

*The design of the mace interprets this theme* in the idiom of the life process:

From the seed at the base of the stave the mace grows in unity and strength until it differentiates by a four-fold separation into diverse elements.

This four-fold diversity is significant because of the four faculties existing at this time and, as well, of the four church-related colleges federated and affiliated with the University. These diverse elements together form a crown, and the points of the crown, while tending toward a union do not quite touch but remain as individuals suspended in tension and yet engaged in a deep harmony.

This creative process is focused not on the traditional spherical orb of static perfection but rather on an elliptical silver ovum—the egg-shaped symbol of creativity—the marvellous potential of a new individual life.