A REPORT ON A SABBATICAL LEAVE 1969-1970

Presented to the

Faculty, the Administration, and the

Board of Trustees of

Mt. San Antonio College

bу

Thomas W. Bull

November 1970

INTRODUCTION

It is with pleasure and gratitude that I present this report on my sabbatical leave for the year 1969-1970. comply with the statement of purpose in my request for a sabbatical, I have divided this report into two main parts. Part I consists of a report on visits to schools, colleges, and universities throughout Europe. The Appendix to this report contains a complete list of almost all of the institutions visited. However, no attempt will be made to report on all of those listed due to the insignificant amount of information obtained; for example, in Vienna, Austria, a visit was made to the Akademie Der Bildenden Kunste. Considerable amount of time was spent wandering around the halls of the institution seeking information concerning the location of the Headmaster or someone in charge. Although several students were contacted, the results of this visit were less than fruitful.

Part II of this report will deal with the cultural and historical aspects gained through travel during my trip throughout Europe. It may be worthy of note that the writer drove approximately 20,000 miles during the period of September 9, 1969 to May 8, 1970 while visiting countries, places of historical interest, and schools throughout Europe.

TABLE OF CONTENTS.

		PAGE
I.	EDUCATIONAL INSTITUTIONS VISITED	1
	M.T.S. (Middle Technical School) and	
	Wilhelmina School, Hengelo, Netherland	1
	Technical Engineering Institute,	
	Lübeck, Germany	3
	Chalmers Institute, Goteborg, Sweden	5
	Roskilde Tekniske Skole, Roskilde, Denmark	7
	Copenhagen Tekniske Institute,	
	Copenhagen, Denmark	8
	Technische Hochschule-Munchen,	
	Munich, Germany	10
	National Technical University,	
	Athens, Greece	11
	Istituto Tecnico-Commerciale,	
	Rome and Milan, Italy	12
	Istituto Professionale Industriale,	
	Rome, Italy	13
	Istituto Tecnico per il Turismo,	
	Milan, Italy	15
	Escola Industrial Marquis de Bombal,	
	Lisbon, Portugal	17

		<u>P</u> ,	AGE
	Seccio de Aeronautica and Instituto		
	Industrial, Alverla, Portugal	•	18
	Insittuto Industrial do Porto,		
	Porto, Portugal	•	20
	University of Madrid, Madrid, Spain	•	21
	Technical and Polytechnical Colleges		
	of England	•	23
	Technische Universitat Hannover		
	Hannover, West Germany	(* :	24
	Ecole Superior de Aeronautic, Paris, France.	•	25
II.	CULTURAL AND HISTORICAL ASPECTS		27
III.	SUMMARY	٠	48
IV.	APPENDIX		51

M.T.S. (MIDDLE TECHNICAL SCHOOL) AND WILHELMINA SCHOOL, HENGELO, NETHERLAND

Although these two schools are listed separately, and are in fact separate institutions in the same city (a few blocks apart), their combined efforts are coordinated for the ultimate benefit of students in industrial technology training. Students may, and usually do, attend both schools at various times. The M.T.S. is devoted to general educational skills, industrial technology theory and practice, and elementary science, including mathematics and physics. The industrial processes offered include electronics, machine tool operation, welding, sheetmetal, mechanical design, and civil design. Each area of training is offered for a specific time period, depending on the complexity of the subject, and the student may complete his training in any area in less than the scheduled time limit providing he completes all work requirements satisfactorily.

Students start their training at approximately the age of 16 years. They finish at the age of 20 to 22 years. Most students start in the M.T.S., then transfer

to the Wilhelmina School. A few start in the Wilhelmina School, take some concentrated practical industrial training, then go directly to work for the Stork Industries which are located adjacent to the school. The majority of students concentrate on theory and practice at the M.T.S. and transfer to the Wilhelmina School for a short period prior to accepting a position in the industry. The point in time that the transfer takes place depends upon the success of the student in his studies at the M.T.S. may transfer at any time if they have reached the plateau of minimum or maximum achievement. The caliber of training received at the Wilhelmina School is dependent upon the theoretical achievement of each student prior to entrance. A unique feature of the Wilhelmina School is that a student may walk out of his classroom, enter the shop (which is geared to industrial production), and participate in a real industrial environment. Training in the shop consists of the application of theoretical and practical knowledge in the production of small pumping plants, turbine pumps, heavy equipment motors, and accessories for the units. Needless to say, I was very

impressed by the organization of the total training program, the application of the theory to the practice, and the opportunities offered to the student regardless of his ability.

Finally, it is worth noting that the lighting was adequate in all classrooms and labs, and that the equipment used in all labs was relatively new, modern, and in excellent working condition. These two facts are contrary to my observations in a majority of my visits to schools in Europe.

Mr. H. J. Hoekstra, an instructor and my guide, exhibited enthusiasm and patience in conducting me through both schools in one day.

TECHNICAL ENGINEERING INSTITUTE, LUBECK, GERMANY

Selected students enter this engineering college after a "two-track" system of education through lower grades. In general, students in Germany start school at the age of six years. They spend four years in the Primary school and during that time, they are evaluated for competency and direction of purpose. Those who do not

qualify for the Gymnasium may spend an additional ten years in the Real secondary school and then go into business or industry. If they show "promise," they may qualify for two additional years in a Fach Oberschule (similar to our technical training at M.S.A.C.) and further may qualify for the Technical Engineering Institute. From the Primary school, those who qualify spend twelve years in the Gymnasium, then transfer directly to the Technical Engineering Institute or to the University. This institute requires three years (six semesters) for completion. The first three semesters involve traditional engineering training; that is, chemistry, mathematics, and physics. This is called Basic training. Upon completion, a qualifying examination is given. Those who pass continue on into the second half of the three-year period of training. These three semesters are spent applying the theory and principles learned in the Basic. The first three semesters are comparable to the four semesters of an engineering major at M.S.A.C. This college is a new, beautiful, modern institution, an exception to most schools visited in Europe. Mr. Hermain Groth was my quide.

CHALMERS INSTITUTE, GOTEBORG, SWEDEN

The visit to this college proved to be most fascinating for two reasons. First, the ultimate objective of the college, in addition to applied academic engineering training at all levels, is pure scientific research using a combination of principles of mechanics and electronics. Secondly, my guide, who is a research professor in medical electronics, is a cousin of a life-long friend of mine. My wife and I, in addition to having a thoroughly delightful tour of the institution, were taken on a short sight-seeing tour of the city and had the pleasure of having lunch and a wonderful visit at the home of the professor with his charming wife and two lovely children.

The Chalmers Institute is referred to as a fouryear Technica Herschula, or Technical Upperschool.

Selected students may enter this school after nine years
in Basic school and four years in the Gymnasium. The
first two years are spent in basic academic engineering
studies and the second two years are spent as assistants

to research professors learning to apply engineering principles to the solution of research problems. The facilities and equipment in this college are second to none that I have viewed. The following is an example of the work performed by the professor with the help of students, and in this case, medical doctors: The professor, who holds the equivalent of a doctor's degree in electronics, has been working with medical doctors and photography experts for the past two years. He has developed a photoelectronic device which can be inserted into a single blood stream at the base of the skull and moved up into the brain to photograph nerve ends and blood-stream "blocks." This is the most difficult application of the device. It is used in the spinal column to photograph "pinched" nerve ends. In addition to the photographic device, a television device is being developed to transmit "live" pictures from inside the blood streams from any part of the human body. are only two of many research projects taking place in the Institute. Some of the research projects are being coordinated with medical institutions in the United States. Mr. Roland Malvren was my guide.

ROSKILDE TEKNISKE SKOLE, ROSKILDE, DENMARK

Although only one school is listed here, three separate schools were visited in Roskilde. Each of the three schools is what I consider to be purely vocational in educational offerings. Students start their training at the age of 15 or 16 years. The main school offers printing, beauty operator training, and related technical and general subjects. The second school is devoted exclusively to all types of welding training and woodworking. The third school offers all phases of training relative to automotive service and repair. The amount of training has some very unique features. The main feature is that each instructional area starts with a 10 week or 16 week fulltime study schedule. After this phase is complete, the student goes to work in industry as an apprentice, but must return to school for an additional four weeks of full-time study each year for two more years. All training in the school is coordinated with on-the-job experience. At the end of three or more years, the student receives his diploma if his work in school and on-the-job is

satisfactory. The main school and the welding and woodworking school are housed in relatively old structures.

However, the equipment for training is very adequate,
and except in isolated instances, the lighting is satisfactory. The automotive training program is being conducted in new, incomplete facilities. When finished,
these facilities will be excellent. Mr. Erik Hanson,
headmaster, was my guide.

COPENHAGEN TEKNISKE INSTITUTE, COPENHAGEN, DENMARK

This institute is a large, five-story structure located in the heart of downtown Copenhagen. The curriculum offerings are usually flexible to meet the needs of

(a) individuals, (b) groups of small business men, and

(c) specific industrial problem situations. For example, short courses are offered occasionally, upon request, which deal with new (most recent) methods and materials for industry. These courses are designed for the benefit of men in small industries whose jobs only allow them a limited time away from their workshops. More extensive courses are offered full-time day students. A most unique

feature is found in a van (large truck with trailer) which is used as a traveling classroom. The van is used to (a) carry the course and instructors to outlying communities and (b) carry on a specific research request in the field for an industry. If a particular industry is having a production problem, the van and selected instructors are sent to the plant to carry on research and make recommendations concerning the problem. ly go to the source to help small industries to become and remain successful. Additionally, they tailor certain night courses to meet the needs of management personnel; not lecture courses in human relations, etc., but advanced "how to" courses on very highly specialized machinery such as computerized machinery. The institute also carries on a very complex material testing program. design and build all test machinery and equipment. my visit, I viewed an apparatus which was dropping a 200 pound weight into a chair every thirty seconds to test the life of the chair. The machine shop was the most adequately equipped of those that I viewed in Europe. This highly specialized technical-vocational institution offers training in the areas of plastics, metallurgy, machine operation, automotive, foundry, commercial electricity, welding, wood working, acoustics, heating and ventilating, textiles, material testing and analysis, business economics, and management development. They are very thorough in meeting the needs of the local industries.

TECHNISCHE HOCHSCHULE-MUNCHEN, MUNICH, GERMANY

This institution consists of a large complex of multi-story buildings located in the heart of Munich. The enrollment averages 8,500 day students whose ages range from 19 to 25 years. The students tenure ranges from four to five years depending on his success and/or degrees sought. After two years of full-time study, a "primary examination" is given. If the student qualifies, he may continue for two or three more years until he completes all work for the "diploma." If he completes this work successfully, he may choose to work one or two more years to qualify for a doctor's degree. If a student wishes to become a teacher, he must work successfully in industry for four or five years after receiving his

diploma. Majors offered at this institution are:

- (a) Mechanical Engineering, (b) Architectual Engineering,
- (c) Chemistry, (d) Physics, (e) Mathematics, (f) PreMedical, (g) Pre-Agriculture, and (h) Pre-Brewing. The
 final three to five years of the majors in medicine,
 agriculture, and brewing are studied off-campus at special
 schools. Dr. Horst Engerth, head of the school of brewing, was my guide and informant.

NATIONAL TECHNICAL UNIVERSITY, ATHENS, GREECE

Although this university offers many majors such as art and archeology, my guide, who is an engineer, gave me information on three technical majors. They were:

(a) Mechanical Design and Service, (b) Electronics, and

(c) Computer Technology. The Computer Technology major is relatively new (a year or two old) and was lacking in quantity (not quality) of equipment and machines for student practice. The Mechanical Design major had many options for student selection. Some were (a) automotive,

(b) heavy machinery, (c) hydraulics, and (d) electromechanical. Similarly, the Electronics major listed

selected options of study such as communications and commercial electricity. Most appropriate to this campus were the many statues and artifacts which reflected Greek history and mythology. My guide for an excellent tour of the technical facilities was Professor Nicolas

Theophanopoulos. In addition to the tour, I enjoyed a vellworth very fine discussion with the Professor at lunch time in Confacting a typical Greek restaurant near the University.

ISTITUTO TECNICO-COMMERCIALE, ROME AND MILAN, ITALY

This institution, which is similar to our high school but not as comprehensive, is common to most medium size and large cities throughout Italy. Students enter at approximately the age of 14 years and may take training from three to five years, depending on their abilities and objectives. The majority of students go directly into a business job from this institution. A small proportion transfer to the University upon completion of entrance requirements. The tecnico-commerciale school would be comparable to a high school which offers training in all aspects of business education, plus general education. The

general education classes are very similar to those emphasized in our schools, and the specialization consists of classes in typing, shorthand, economics, business machines, bookkeeping, and finance. After visiting a similar institution in Milan, I found that the curriculum offerings were identical. Additionally, I was very surprised to find that a full-time student engaged in 24 My guide in Mellen to 26 hours of academic classes per week. Rome was Mrs. Rescalli, an English teacher, and in Milan, Mrs. Volpones, also an English teacher. Actually, in both schools I was conducted on a tour of facilities by the headmaster and/or assistants, with the English teacher acting as interpreter. As an afterthought, I might add that the school in Rome is located in a typical, old, multi-story building. The one in Milan is a new, bright, modern, spacious structure.

ISTITUTO PROFESSIONALE INDUSTRIALE, ROME, ITALY

The organization and structure of this school is very similar to that of the technical-commercial school. The general education courses are the same, but instead of

offering business classes they offer technical-vocational training. The majors offered are similar to industrial arts courses available in our high schools. The important difference is reflected in the amount of time spent in training in each area. Where our industrial arts courses offer training of five to ten hours per week, they train for ten to fifteen hours per week in selected specializations, such as electronics, commercial electricity, automotive, machine tool practice, and drafting. The day I toured this school (December 1, 1969) it was rainy and very cold outside. I was surprised to find that it was equally cold in all areas within the school building. Students and instructors wore their overcoats or warm, winter jackets. There appeared to be no heating system in the entire school building. In a few rooms, I observed a small electric heater which could warm a student if he stood directly in front of the heater. An additional comment relative to the electrical lighting in all rooms is that it was obviously far less than adequate. This observation appeared to be true of most schools in Italy. Overshadowed by the chill, which permeated the school, was the

warmth of reception provided by the headmaster, his assistants, and Mrs. Battaglia, my interpreter. The Italians are fabulous hosts, and they certainly made me feel welcome during my many visits to schools.

ISTITUTO TECNICO PER IL TURISMO, MILAN, ITALY

My visit to this school revealed one of the most interesting vocational majors to be offered to students anywhere; namely, training for the tourist trade. As one might expect, tourism is a major industry in Italy. Consequently, schools for training in tourism have been established in Rome, Venice, Palermo, and Milan. addition to the required general education curriculum, major emphasis is stressed in the applied areas of study of (a) air transportation, (b) sea transportation, (c) bus and railroad transportation, and (d) languages. Each student is required to spend a minimum of four hours per week for approximately five years in foreign language classes. Normally, each is required to speak and write English, French, and German prior to graduation. Training in additional languages is available upon selection and

qualification by the student. Perhaps the most unique feature of each of these schools is the inclusion of a "real" tourist office in the school. Each office is "real" in the sense that it contains all current materials found in a real-life tourist office. Students take turns working in front of and behind the counters. They arrange all types of tours for each other, then they are in turn "checked" by other students. They all "get into the act." Additionally, each student is required to plan and make arrangements for a tour for himself at the end of each school year. At the end of the fourth school year, advanced students plan a trip abroad during the summer months, live with a foreign family, and take courses in the school in the area where they are living. After the fifth year of school, if all work is satisfactory, the student will be awarded his diploma. There is no problem in the placement of these very well-trained youngsters. The age at graduation is 19 or 20 years if progress is satisfactory. Mrs. Soria, a director of the program and an instructor, was my very cooperative guide. I met with one of her classes for an hour of very interesting discussion. I cherish the

experience at this school as one of my best in Europe.

ESCOLA INDUSTRIAL MARQUIS DE BOMBAL, LISBON, PORTUGAL

After two visits to the Ministry of Education and another to the Director of Foreign Studies, arrangements had been made for me to visit several schools in the Lisbon-Porto areas. During my visit at Marquis de Bombal School, I had the pleasure of meeting and touring with Mr. J. Gilliam (also on sabbatical leave) from Grossmont High School in San Diego. This school is as close to being identical to our comprehensive high school as any that I had visited. The age of students is 12 to 14 years at the beginning and approximately 17 to 18 years upon graduation. Students may attend for three to five years. do not graduate after three years, but may leave for work purposes. The final two years are devoted to advanced study and advanced practical industrial training. Night classes are available only to students who are currently employed in industry. The study load for full-time day students is approximately 42 hours per week. A typical full-time schedule includes the study of English,

elementary chemistry and physics, ethics (religion and morals), machinery, mathematics, Portuguese language, practical shop work, and miscellaneous electives. The schedule is very rigorous. The school is a relatively modern structure and all shops are well equipped. A great variety of majors are offered, including such traditional courses in machine tool operation, electricity, and woodworking. The Headmaster, Dr. Pinheiro, was my guide and host.

SECCIO DE AERONAUTICA AND INSTITUTO INDUSTRIAL, ALVERLA, PORTUGAL

On Wednesday, February 18, I was conducted on a short tour of the Instituto Technical-Commercial in Villa Franca de Xira by Headmaster Joaquin Serra and his assistant,

Mr. Terenico Anahory. This school is very similar to the commercial schools visited in Rome but considerably smaller in size. On Thursday, February 19, these same two gentlemen conducted me on a tour of a small vocational school in Alverca, the Instituto Industrial. Traditional vocational-technical subjects, such as machine tool operation, drafting, automotive, welding, and electricity are

offered for student selection. The one story building being used is relatively new, having been occupied only recently by faculty and students. After touring this facility, Mr. Anahory accompanied me to Seccio de Aeronautica, which is a Portuguese Air Force base. Our guide was a colonel who had received special logistics training in the United States Air Force in Texas. The tour of this base was most interesting in that it revealed the multi-purpose of support facilities for the Air Force. The base was more like an aircraft factory than an air base. All types of training in aircraft construction and repair are available to employees of the air base. Most of the students who complete their schooling at the Instituto Industrial are offered employment at the air base. Aircraft construction, repair, and service experience are gained by students under the direction of senior mechanics and technicians. Practical experience is accomplished on single-engine and multiengine conventional aircraft and on two-place helicopters. The tour of the air base included visits to the officers quarters, the flight line, the training section, and several hangers where a variety of construction and repair jobs were

being completed. This visitation was, without a doubt, one of the most enjoyable in terms of viewing realistic INSTITUTO INDUSTRIAL DO PORTO, PORTO, PORTUGAL wonderful family training situations.

It would be impossible to describe the many courtesies extended to me during my visit to the Industrial Institute of Porto, Portugal. All personnel on the staff of Mr. Raul de Lima Ayres, headmaster, gave me the "red carpet" treatment for a full day. In addition to an extensive tour of the facilities of the institute, I enjoyed a personalized tour of the city of Porto and a delightful evening and dinner at the home of and with the family of Mr. Ayres. I am certain that I will be able to reciprocate by entertaining, here at home, one or more of the people who received me so amiably in Porto.

The Industrial Institute is a multi-story complex of relatively new, modern buildings. It has a student population of over 2,000 and the age range is from approximately 15 or 16 years to 19 or 20 years. tenure of the student is four years, depending on objec-

tives and success. Students may transfer to the University from this institute, but most go directly into industry. General education subjects offered here are almost identical to those listed for the schools in Lisbon and Villa Franca de Xira. The technical-vocational subjects are similar but more advanced in coverage; that is, the theoretical aspects of each area of study are more extensively covered. Additionally, the coverage of laboratory practices appears to be more extensive, both in number of hours of practice and in the complexity of operations. Each of the labs visited were quite roomy and very well equipped. Lighting in all rooms was excellent. I had the opportunity to talk with and observe students in action in all labs, and I found them to be extremely enthusiastic about their training. In fact, the personal contacts with both students and faculty made my visit to this school the most profitable of all visits to schools in Europe.

UNIVERSITY OF MADRID, MADRID, SPAIN

By virtue of letters of introduction from the Ministry

of Education, I toured two colleges of the University of Madrid. They were: (1) Escuela Tecnica Superior de Ingenieros Aeronauticos, and (2) Escuela Tecnica Industrial. I will not attempt to describe the details of each of these schools because they compare favorably with the respective schools of aeronautics and engineering of the University of California. Students start in the school of their choice, if qualified, at the age of 18 They may, depending on tenure and success, receive the bachelor's, master's, or doctor's degree. Typical aeronautical and engineering specializations are offered to the students. The University is a beautiful complex of buildings and grounds and the labs visited were well furnished and equipped to provide excellent experiences for participants. A considerable amount of American equipment was in evidence, and it was obvious that a great deal of research is being conducted in most of the advanced labs. Perhaps the greatest difference between these schools and ours is the fact that their students participate in 25 to 30 hours per week of academic work. The reader may have observed that the student work load

of 25 to 30 hours per week is consistant in upper schools throughout Europe. The writer suggests an in-depth, comparative study of this fact.

TECHNICAL AND POLYTECHNICAL COLLEGES OF ENGLAND

Higher education in England, in all areas of technology training, is in the process of undergoing significant change. All technical colleges will become polytechnical colleges by 1971. Most of the colleges visited have reorganized under the polytechnical system but simply have not changed the name of the institution yet. The first technical colleges were formed over 200 years ago as a result of a need to teach related technical subjects to apprentices. As England became more industrialized, technical training became more complex and more all inclusive of related technical sciences. technical colleges started as an integral part of a university. Each will now be an independent college and will be authorized to award diplomas and degrees without direction from the University. Diplomas are awarded to those who complete a specific curriculum (usually technical

in nature) in a two- or three-year program. Degrees are awarded for the completion of a four- or five-year program. Additionally, all technical institutions have initiated a training program called the "sandwich system." This system is comparable to our "work-study" programs. Students who participate in this program study part time at the college and work part time in industry on a job related to their study program. In addition to typical degree programs, such as architecture, civil engineering, management, economics, mechanical engineering, and electronics, most polytechnical institutions offer short term technical courses for clerk-typist and executive secretarial science training to meet local industrial One-year and two-year technical programs are needs. offered in a variety of areas of training in each college. The three colleges toured in England were Polytechnical College of London, College of Technology in Oxford, and Slough Technical College, Slough.

TECHNISCHE UNIVERSITAT HANNOVER, WEST GERMANY

This technical university offers majors similar to

those offered by the Technical University of Berlin. university awards diplomas upon successful completion of engineering studies for a duration of four to six years. Students may qualify for entrance between the ages of 18 and 20 years. At a particular point of progress in each major, students must make arrangements with industry to participate in one-half of a year of practical experience in their respective areas of study. In the Hannover Technical University there are approximately 5,000 students, many of whom are part time. In addition to traditional majors, such as Architecture, Civil Engineering, and Mechanical Engineering, the University offers Traffic Engineering, Hydraulic Engineering, and Marine Engineering. Dr. Walter Grabe, director, was my very cooperative guide at this institution

ECOLE SUPERIOR DE AERONAUTIC, PARIS, FRANCE

In the past two or three years, this college has completely reorganized. The present college name is not indicative of the present curriculum offerings. All studies in the area of aeronautics have been transferred

to a new college in the City of Goulouse in South France. The remainder of studies, plus additional offerings, are in the areas of study, such as electrical engineering, architectural engineering, mechanical engineering, and marine engineering. The course offerings in these areas of study are typical for all such engineering studies.

Mr. Guy Stehle, from the Ministry of Economics, was my guide and interpreter. Mr. Stehle was also responsible for my visit to the Center for International Studies, the University of Nantere, the Ministry of Economics, and a full day of historical sight seeing south of Paris.

Wonderful person - har a Vietnames wife equally charming.

In addition to the fact that we traveled approximately 20,000 miles throughout Europe in our automobile, we had twenty (20) ferryboat trips and three (3) sight-seeing boat trips. The sight-seeing trips took place in Antwerp, Amsterdam, and Venice. The smallest boat was a three-car ferry from Spain to Portugal, and the largest boat was the Queen Elizabeth II which we took from Southhampton to New York. Three continents were visited, including Europe, Africa, and Asia. While visiting twenty-two countries, including three Iron Curtain countries (Hungary, Yugoslavia, and Bulgaria), West Germany was visited six times, France four times, and many other countries two or three times. During the 243 days in Europe, 121 days were spent in hotels, bed and breakfast houses, and pensions. Throughout Europe, 115 days were spent in camp-Near London, 6 days were spent with friends and 1 day and night was spent in the waiting room of a ferryboat company at Hollyhead, England.

The trip started when we arrived at Zurick, Switzerland.

I picked up a Volkswagon camper at the airport. It had been ordered months before our departure date.

During the tour of Switzerland, we spent several days at

Lucerne and were pleasantly surprised by the many quaint houses, buildings, and churches. The city, which dates back to 1291, has many buildings with historical paintings painted on the outside walls. A highlight of the visit to Lucerne was a trip through the Museum of Transportation and Communications. Included in the exhibits were ancient and modern examples of transportation for land, sea, and air. The chief landmark of Lucerne is the fourteenth century Chapel Bridge which is a covered wooden bridge that crosses the Reuss River. The bridge contains over 100 murals on the walls which depict the history of the city and the nation.

From Lucerne, we traveled through Bern to Basel then north along the Rhine River to Heidelberg, Germany. We toured the twelfth century Heidelberg Castle which is now in ruins. I photographed many castles along the Rhine River while traveling to Cologne. I had a great desire to return to Cologne to visit the impressive Gothic Cathedral in the center of the city. During World War II, I was part of an infantry regiment which "took" Cologne, and although I saw the cathedral at that time, I had no opportunity to visit the inside. I was more than impressed by its tremendous

interior, not only massive, but beautiful. The cathedral was conceived in the year 1250 and completed in 1800. Except for St. Peters in Rome and Westminister Abbey, this cathedral should be on the top of any list of sights to see in Europe.

North to Antwerp, Belgium, and a most rewarding visit to Ruben's House which contains a majority of works by the painter. A visit to an old fortress castle, which is now the National Maritime Museum, revealed a collection of ship models, navigation instruments and charts, and documents which illustrated the history of shipping in Antwerp and the nation in general. On to Holland and the Hague where we drove through the residential community of ambassadors from throughout the world. Near the Hague we visited the miniature city of Madurodam. There are two miles of walks through this city which is built to 1/25 size. It contains historic buildings, as well as modern architecture.

Aircraft, trains, boats, and automobiles move throughout the city.

In Amsterdam, a visit to the Rijksmuseum (State Museum)
revealed a three hundredth anniversary celebration of
Rembrandt's works. His "Night Watch" was perhaps the most

outstanding, massive painting I have ever viewed. The subjects in the painting really "look alive." Equally significant works of Frans Hals, Vermeer, and Van Gogh were on display. Later, a most sobering tour was made through the house of Ann Frank. We visited the quaint town of Markem where ancient native costumes are still worn by the inhabitants. We took a short side trip to the world famous (for cheese production)towns of Gouda and Edam. It should be noted that we saw very few windmills but thousands of bicycles in Holland.

After visiting schools in eastern Holland, we traveled through northern Germany and took a ferry across the Baltic to Denmark. We drove straight to the 800-year-old city of Copenhagen where we visited the Glytotek Museum which is noted for its French and Danish paintings, as well as Egyptian art. One cannot visit Copenhagen without seeing the "Little Mermaid" in the harbor. While spending a full Sunday just walking, we had the good fortune to see the Gefion Fountain and the changing of the guard at the King's residence, the Amalienborg Palace. In Roskilde, the Headmaster of the school directed me to the "Church of the Kings."

It is a cathedral built in 1182 where more than forty kings and queens have been laid to rest since 1478. In Hillerod. we toured the Frederiksborg Castle which is on an island. It is now a beautiful museum which contains priceless treasures of paintings, furniture, tapestry, and silver and gold objects of art. We took a short trip to Gothenberg, Sweden, then back south through Denmark and into Germany In Bad Harsberg, Germany, we visited relatives of again. friends from Illinois. This quaint little German town is located a few kilometers from the Iron Curtain, and while there, we were taken to lunch at a typical old German restaurant near the border. We walked to the border and saw the clearing, the fences, the huge ditch, and fences and guard towers across the clearing. I started to take some pictures, but the people we were visiting with told me that the sign on the fence read, "photography is provocation for shooting." Needless to say, I didn't take any pictures.

On to Munich where we rejoined the Dale Dooleys. An interesting fact about Munich is that many of the main streets in the downtown area are being excavated for the construction of a subway which is to be completed prior to the 1972

Olympics. The highlight of the visit to Munich was a tour of the largest museum of technology in Europe, the Deutsches Museum. After Munich, we stayed in Salzburg, Austria, and visited the Hohensalzburg Castle, a twelfth century fortress. While in this area, we visited the Mozart Museum, went underground for a salt mine tour, and had a most impressive visit to Hitler's Eagles Nest retreat. In Vienna, we spent an enjoyable evening watching a light operetta and spent an equally enjoyable afternoon at the Spanish Riding School. Only horses of Spanish origin, the White Lipizzan, which have been trained for at least seven years, are used.

From Vienna, we drove east to Budapest, Hungary, where I could tour no schools without at least six weeks notice. We did tour an old castle on the Danube in Budapest at the time a motion picture was being filmed. I was also fortunate to celebrate my birthday, October 28, in a very picturesque Hungarian restaurant. From Budapest, we drove south to Belgrade, Yugoslavia, then (hurriedly) through Bulgaria. Yugoslavia appears to be more progressive and modern by comparison to Hungary and Bulgaria. The people seem happier there too. Oh yes, I didn't mention that Mr. Dooley and I

were fined at the Hungarian border for not reporting to the police within twenty-four hours of entering the country. That was an interesting ordeal. Additionally, I should mention that we were told to "move on" many times by the military. They appeared to be keeping us under surveilance throughout our journey in Hungary and in Bulgaria. A lack of freedom is extremely evident.

It was a very happy occasion when we crossed the border into Turkey—the Turks are extremely friendly people and are always ready to be helpful. Of all countries visited, Turkey revealed the greatest different kinds of signts.

Mosques and minarets dominate the skyline of every town (large or small) in Turkey. They are both beautiful and mysterious. The Mosque of Sultan Ahmet, better known as the Blue Mosque, has a breath—taking interior. Beautiful blue mosaic tiles, massive thirteen feet diameter columns, and a dirt floor covered by beautiful prayer rugs characterize this unsual building in Istanbul. The Church of St. Sophia, which is now a museum, was a church for over 900 years and a mosque for 480 years. It provided an interesting visit. A visit to a museum of fantastic treasures of all kinds, the Topkapi

Palace, was most rewarding. On a tour through the Dolmabahce Palace, or Sultan's Palace, we saw treasures from all over the world. These treasures were contributed by rulers from all over Europe, as well as from Japan and China. An underground cistern, visited on a short tour of Istanbul, was built between the years 527 and 565 so that the city would always have water in case of an enemy attack. The Grand Bazaar, a city within a city, is a "must" for all tourists. recommend the best bargain in Europe; that is, a ferryboat sight-seeing trip up the Bosphorus. It costs between 23 cents and 30 cents per person--you are expected to haggle over the price--and it takes approximately five hours and stops at five or six ports on the European side and five or six ports on the Asian side. Also, it stops for over an hour in Asia at lunchtime so the passengers can eat and shop for souvenirs. An unforgettable trip. The six-day visit to Turkey was highlighted by six nights in three or four different campgrounds. With one exception, they were excellent. You cannot wash in a sink without an attendant waiting to clean the bowl for you. It is a little difficult to get use to, but they also scrub the floors while you are showering.

Another "thrill of a lifetime" in Istanbul is a ride in one of their dilapidated taxis. It is more fun than a roller coaster ride, but also more dangerous.

Reluctantly, we left Turkey for north-eastern Greece and were greated at the border by Greek soldiers in the traditional Greek costumes. Very picturesque to say the least. Although we met wonderful, friendly people in all countries, I must admit that the Greeks are the friendliest and the most outgoing. Almost without exception, every Greek we met has a brother, an uncle, an aunt, a cousin, etc. in the United States. They are eager and happy to talk with Americans and they ask many questions. I believe that the Greeks are the proudest cooks in the world. You (a foreigner) cannot sit in a restaurant without being invited into the kitchen to select your food. You may not be able to pronounce the name of the food, but you may "point out" anything that looks good, and it all looks good. Every minute of experience in Greece remains a happy treasure in our minds, such as the time we couldn't find a parking place in Kavala. The tourist policeman came to us (after we had circled the main square several times) and said "park right here--I'll watch your car

until you come back." "Here" was in the middle of the street. The tourist police even called the bank president, and they opened the bank for us (it was evening) just to cash a few travelers checks. The bank president even escorted us around town and told us where to eat and which hotels were best. Driving southwest, we passed through the industrial (and smoggy) city of Thessaloniki on our way to a campground at Platamon under the shadow of Mt. Olympus. The campground was located in a beautiful cove on the beach of the Aegean Sea. After an exploration of some ruins of an ancient castle near our camp, we headed south through Larissa and Lamia to Athens. The countryside throughout Greece is quite similar to that of Southern California. A visit to the Acropolis takes one back in history to the first inhabitants who settled in Athens in about the year 3500 B.C. The first palaces in that area were constructed sometime near the year 1400 B.C. The Parthenon, the most impressive structure, is reputed to be the most perfect piece of architecture created by man. The ruins of the Temple of Athena Victorious, the Erectheion, and the Propylaea still stand from the fifth century.

Monastery of Daphni, built in the fifth or sixth century, is famous for its beautiful mosaics on a background of gold.

Tourists should not miss seeing the Plaka (restaurant and night club area) and the Flea Market. Almost without exception, male inhabitants of Athens may be seen manipulating their "worry beads."

A side trip by ferry took us across the Corinth Gulf from Aivion to Itea, then up the mountain to the ruins of Delphi. There we visited the Oracle, the Chariot Stadium, the Castalian Spring, and a museum. After returning to Aivion, we traveled to Patrai, crossed the Gulf again, and drove to a point of embarkation for the Isle of Corfu. We had a very pleasant one-day stay on Corfu prior to a ferry ride to Brindisi, Italy. An unforgettable experience on Corfu was dinner at a rickety, out-of-the-way restaurant with Greek natives. Two of the young men performed traditional Greek dances for us during the evening after having wine at our table.

After driving across Italy, we camped at Sorrento and took a very rough ferryboat trip to the beautiful Isle of Capri. We visited the Ruins of Pompeii, then headed north

for the most magnificent of all art treasures, Rome. would require a book to list all of the sights visited during our ten-day stay in Rome. However, the following are most notable: the Colosseum, the ruins of the Roman Forum, the Monument to King Victor Emmanuel -- a huge white building with the Tomb of the Unknown Soldier from World War I--the Fountain of the Rivers by Bernini in Piazza Novona which is centered between the Fountain of the Moor and the Fountain of Neptune, the Pantheon, and last, but not least, Vatican City. St. Peters is, of course, the largest and most awe-inspiring building of its kind in the world and contains many chapels, galleries, museums, and priceless art treasures too numerous to mention. Sistine Chapel and the Pieta by Michelangelo were the two most beautiful works of art I have ever seen, not to mention numerous works of art by Raphael. Before I change the subject, it may be worth noting that Rome is one large traffic jam.

On the way to Florence, we took a side trip to see the Leaning Tower of Pisa. In Florence we viewed another famous work of art by Michelangelo, the Statue of David. In the

Uffizi Gallery, we were fortunate to see the works of Giotto (Madonna and Child, 1310), Lippi (Madonna and Child with Angels, 1464), and Botticelli (Primavera, 1477, and The Birth of Venus, 1486), and numerous works of Leonardo da Vinci, Bellini, Raphael, and Rubens. After leaving Rome, we traveled to Venice for a boat trip around the Grand Canal, a walking tour of shops around San Marco Square, and a delightful tour through the biggest glass factory in the city. We observed much evidence to support the fact that Venice is sinking. Many buildings were submerged below the door sill of the lower floor and we could see debris floating inside the buildings.

From Venice to Milan (a large industrial city) to Genoa and all along the southern coast of France the weather was cold and rainy with snow in all the mountains. We were happy to arrive at our proposed destination in Torremolinos, Spain, a few days prior to Christmas—or so we thought. Shortly after Christmas it started raining and it rained off and on (mostly on) for almost four weeks. Needless to say, our side—trip excursions were curtailed. Highlights of this first visit to Spain included a Christmas dinner with

people from our camp who came from all over the world--a real United Nations gathering; a tour through the Moorish Castle of Granada which was built in 1238; a tour of the 1,000 column Mesquita (originally a mosque built in the eighth and ninth century) of Cordova; the underground Caves of Nerja; and a glimpse of the Rock of Gibralter. The land entrance to Gibralter was closed by Franco, so we did not enter the city.

A most fascinating side trip from Spain was our trip
to Morocco. A short ferry ride from Algeciras, Spain, to
Centa (a Spanish tip possession) took us out of the Western
World and placed us in the land of contrasts, Morocco in
Africa. Our trip through Northern Morocco consisted of a
series of detours due to the heavy rains, washed out roads,
and ruined bridges. However, we did manage to visit Tetuan,
Rabat, Casablanca, Fes, Meknes, Tangier, and many small
towns and villages. The highways are very good in Morocco,
but there are far fewer vehicles than in Europe. The biggest
traffic problem consists of people walking, people on carts
or on donkeys, and livestock all over the roads. Women walk
along the road carrying huge loads of wood while the men

ride behind on a donkey. The women are usually barefoot. The small villages which dot the land between larger cities consist of tiny adobe huts clustered together and all surrounded by cactus. Each large city has its Medina with narrow, crowded, winding streets cluttered with small shops containing wares and souvenirs of all kinds. Some have openair markets with row after row of flimsy stands piled high with food, clothing of all kinds, miscellaneous utensils, and costume jewelry. You cannot park your car without having a native offer to "watch it" for you and a second native offering guide service. They are both worth the They are very friendly and not "pushy." In fact, we were warned not to travel alone in Morocco, which we did, and we encountered no problems with the people at any time. On three occasions we were the only campers in the campground (three different cities) and we found that the camp was guarded all night long by a lone sentry. In addition to a fascinating tour (with a young guide) of the world famous Casbah of Tangier, we, by accident, took a side trip to view some Roman ruins similar to those in Pompeii. The ruins of Volubilis, near Meknes, consist of approximately 100 acres

of evidence of Roman architecture which was constructed in the second century B.C. In addition to streets, partial building walls, underground waterways, and numerous columns there are beautiful mossaics on the floors of many of the structures. It is a well preserved reminder of the past.

We traveled back to Centa, camped on the dock while waiting for the ferry, then back to Spain and north to Sevilla. We tried to visit the beautiful cathedral which contains the tomb of Columbus, but, believe it or not, we could not find a place to park so we could not visit the cathedral.

We left Spain and proceeded along the south coast of

Portugal to the southwest tip of the country and visited

Sagres. This is the location of the fortress where Prince

Henry the Navigator founded his School of Navigation. A huge

stone compass built into the ground provides evidence of

former activities.

One will never forget his first sight of Lisbon. As you approach the Bay of Lisbon from the south, you find that you must cross a large bridge to get to the city. At the southern end of the bridge, high on a mountain top, is a monument to

Christ the King. The momument is 110 meters high and the statue of Christ (facing Lisbon with arms outstretched) is 28 meters high. It is very impressive and can be seen from across the bay all over Lisbon. A short drive from Lisbon placed us at Capo de Roca, the western most point of the European continent. To the north of Lisbon we visited the quaint fishing village of Nazare and the Cintra winery in Porto, Portugal. While in the city of Coimbra we visited the University of Coimbra and toured the most beautiful library I have ever seen. The guard opened the library just for us—there were no other tourists there on the day of our visit. On our way out of Portugal we observed many ox carts on the roads and many women carrying huge loads on their backs. Traffic was light on all roads except in the cities.

We journeyed back to Spain for a few days of sight-seeing in the Madrid area. Madrid is a beautiful, modern city with very wide avenues and many parks. During our visit to the Prado Museum (world famous) we viewed the works of Goya, El Greco, Velasquez, and Murillo. A highlight of our visit to Madrid was a conducted tour of the Royal Palace. We viewed about ninty of the several hundred rooms of the Palace. We

also visited the room where Franco meets with ambassadors once a year. We took a very worth-while side trip to Toledo, a city of steep, winding, narrow streets. The government has declared the whole city to be a national monument, and it is still famous for its cutlery.

From Madrid we traveled north through France (through snow and sleet and rain, etc.) and crossed the English Channel from Calais to Dover. My first experience in England could not have been worse than it was. From Canterbury to London, I drove on the "wrong" side of the road in a blizzard. We had not received any mail from home since we were in Torremolinos, so we headed straight for American Express in the center of downtown London. It's not easy to drive on the left side of the street in London at any time, and it is much Worse in a Blizzard. Very exciting to say the least. During our stay in London, we wore out our shoes visiting all of the famous landmarks that all tourists Westminister Abbey and Parliament are the most impressive. We took many side trips too numerous to mention but did include Oxford, Cambridge, Windsor Castle, Eton, Nottingham,

and the most picturesque English city of York. After visiting Shakespeare's birthplace in Stratford-Upon-Avon, we visited Stonehenge on our way to Plymouth. We were extremely fortunate to arrive in Plymouth during an extended (several months) celebration of the three hundred and fiftieth year of the sailing of the Pilgrims to the new world, America. From Birmingham, where I visited my grandmother's former home, we traveled to Hollyhead, took a ferry boat to Dublin, and proceeded on a thoroughly delightful tour of Ireland and Northern Ireland. Many thatched roofed houses were seen on the roads to and from Blarney Castle. There are no fences on the country side in Ireland. property is clearly separated by rows of stone which has been cleared from the cultivated land. Rows of rocks wind in all directions all over the land. Our visit to Londonderry in Northern Ireland was marked by soldiers and rolls of barbed wire on every corner. There had been conflict on the streets prior to our visit there but, fortunately, none during the night of our visit. After a visit to the famous Belfast Castle, we boarded a ferry for a trip to Scotland. weather was cold and inclement, but we managed to visit

Glasgow, Dundee, St. Andrews, and Edinburgh. A tour of Edinburgh Castle was the highlight of our visit to that beautiful city.

We traveled back to London, then I took a side trip back across the English Channel and drove through East Germany to West Berlin. This was a rather depressing trip due to the fact that I was alone. It is no fun traveling in a strange country alone. West Berlin, in contrast to East Germany, is relatively modern and bustling with activity. Each time I crossed the East German border (four times) I was required to change license plates on my automobile. After a tour of Berlin, I returned to Frankfurt, West Germany, and rejoined my wife. After a short tour of historical sights of Frankfurt, we traveled through Luxembourg, a portion of Belgium, and on to Paris, France. We intended to spend only one or two days in Paris due to the recommendations of many people. However, through a contact at a Lion's Club meeting in Paris, I met a young man who, with his wife and my wife, made our two-week stay in Paris a most enjoyable one. We toured all of the usual places of interest, such as the Eiffel Tower, Arch of Triumph, Rodin Museum, Napoleon's

Tomb, Notre Dame de Paris, the Louvre, Sacre Coeur, and the artist section of Mont Martre. Side trips to the Palace at Versailles, cathedrals at Chartres and Orleans, Fouquet's Castle, and the twelfth century palace of Fountainbleau were most enjoyable and educational. Our visit to Paris was a most fitting climax to our European tour. We traveled north to Boulogne where we took a Hovercraft ferry to Dover. We revisited Canterbury, the seat of English religion, and toured the beautiful Cathedral of Canterbury where Thomas Becket and other famous dignitaries are buried. We returned to London and prepared for our trip home on the Queen Elizabeth II. We sailed from Southhampton on May 8, 1970, and arrived in New York on May 13.

SUMMARY

Prior to my departure for Europe, I corresponded with respective embassies (of all countries) in Washington, D.C. My main objective was to obtain a list of technicalvocational schools and colleges. A majority of correspondence referred me to the Ministry of Education in a "major" city in the respective countrys. In most cases, it was impractical to visit the Ministry of Education prior to visiting a school. Consequently, I would locate a school and arrive unannounced. Except for an occasional short wait, I was very well received in almost all instances. In fact, I could write a separate report on the many courtesies extended to me by individuals in most of the schools I visited. In addition to an extensive tour of educational facilities, many headmasters took me on a personal tour (in their cars) around the cities in which their schools were located. I found that Europeans are proud of their cities and of their cultural and historical They are eager to show you and tell you about historical sites within respective cities. Some personnel apologized for their antiquated school facilities, but none apologized for their educational program. They were proud

of what they were doing for their youth and were eager to talk about the various programs offered. Over half of the schools visited had never received a visiting American educator. They appreared surprised and delighted that I would take the time to visit and have an interest in their programs. A dozen or more people have indicated that they will try to come to California and visit Mt. San Antonio College in the near future. I am certain a few will do just that, and I will be happy to receive them for a further exchange of educational ideas for better understanding.

I am proud to state that we were never mistreated in any country during our trip. We found all people, whether we could communicate with words or not, to be more than friendly and very receptive. It is impossible to equate the benefits of this experience to me; they are multiple and varied. I do know that I have a much better understanding of the culture that we Americans have inherited from the variety of cultures evident in Europe. I experienced a feeling of comradeship which needs no definition. It is an obvious relationship of human understanding and purpose. Except for a few isolated instances, our basic objectives

are parallel and can be defined with one word -- freedom. feeling of the importance of this word became more pronounced in the Iron Curtain countries. They need it and they want it, but cannot have it now. I believe that the best contribution I can make to Mt. San Antonio College and to our community is to express my first-hand impressions of the importance of freedom. I will share over 1,300 slide pictures with the personnel at Mt. SAC and members of our community, but I will try to convey the difference between the feeling of freedom as we have it and the so-called freedom of dominated countries. I believe that I have made some friends in every country that I visited, and I feel that these friends have a better understanding of Americans. It is impossible to measure friendship and its effects, but I believe that this is my contribution from the people of Europe to our small community here at Mt. San Antonio College. APPENDIX

EDUCATIONAL INSTITUTIONS VISITED DURING SABBATICAL LEAVE 1969-1970

1.	University of Heidelberg (9-16-69)
2.	Heidelberg, Germany M.T.S. (Middle Technical School) (9-30-69)
۷.	Hengelo, Netherland
3.	Wilhelmina School (Stork Industrial-Vocational School) (9-30-69)
٠.	Hengelo, Netherland
4.	Technical Engineering Institute (10-2-69) (Staatl Fachhochschule Lübeck)
	Lübeck, Germany
5.	Chalmers Institute (10-7-69)
_	Goteborg, Sweden
6.	Roskilde Tekniske Skole (10-8-69)
7.	Roskilde, Denmark Copenhagen Tekniske Institute (10-9-69)
, -	Copenhagen, Denmark
8.	Technische Hochschule-Munchen (10-16-69)
0	Munich, Germany
9.	Akademie Der Bildenden Kunste (10-23-69) Vienna, Austria
10.	
	Budapest, Hungry
11.	National Technical University (11-13-69)
12.	Athens, Greece Istituto Tecnico Commerciale (11-28-69)
16.	Rome, Italy
13.	
	Tecnica Professionale (12-1-69)
14.	Rome, Italy
14.	Istituto Tecnico Industriale (12-1-69) Rome, Italy
15.	
	Rome, Italy
16.	
17.	Milan, Italy
T (•	Istituto Tecnico per il Turismo (12-11-69) Milan, Italy
18.	University of Granada (1-13-70)
	Malaga, Spain
19.	Ministry of Education (2-16-70)
20.	Lisbon, Portugal Escola Industrial Marquis de Bombal (2-17-70)
20.	Lisbon, Portugal

21. Instituto Technical Commercial (2-18-70) Villa Franca de Xira, Portugal 22. Instituto Industrial (2-19-70) Alverca, Portugal 23. Air Force Training & Maint. Base (2-19-70) (Seccio de Aeronautica) Alverca, Portugal 24. Instituto Industrial do Porto (2-23-70) Porto, Portugal 25. University of Salamanca (2-25-70) Salamanca, Spain 26. Ministry of Education Madrid, Spain 27. Escuela Tecnica Superior de Ingenieros Aeronauticos (2-27-70) Madrid, Spain 28. Escuela Tecnica Industrial (2-28-70) Madrid, Spain Polytechnical College of London (3-16-70) 29. London, England College of Technology (3-17-70) 30. Oxford, England 31. Oxford University (3-17-70) Oxford, England 32. Cambridge University (3-18-70) Cambridge, England 33. Slough Technical College (3-20-70) Slough, England 34. Belfast Technical College (3-25-70) Belfast, No. Ireland 35. Singer-Frieden Training Center (4-2-70) Brussels, Belgium 36. Technische Universita: Berlin (4-6-70) W. Berlin, Germany Technische Universität Hannover (4-7-70) 37. Hannover, Germany 38. Center of International Studies for Teachers (4-20-70) Paris, France 39. Ecol Superior de Aeronautic (4-23-70) Paris, France 40. University of Nantere (4-23-70) Nantere (Paris), France Ministry of Economics (4-24-70) 41.

Paris, France