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TECHNOLOGY UTILIZATION IN A NON-URBAN REGION

FURTHER IMPACT AND TECHNIQUE OF THE

TECHNOLOGY USE STUDIES CENTER (8)

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(NASA-CR-157743) TECHNOLOGY UTILIZATION IN A NON-URBAN REGION: FURTHER IMPACT AND TECHNIQUE OF THE TECHNOLOGY USE CENTER Final Report (Southeastern Oklahoma State Univ., Durant.) 162 p HC A08/MF A01 G3/85

N78-34006

Unclas 15295

FINAL REPORT, NASw-3007

JUNE 1978

TECHNOLOGY USE STUDIES CENTER
SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701

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TECHNOLOGY USE STUDIES CENTER
Southeastern Oklahoma State University
Durant, Oklahoma

ACKNOWLEDGMENTS

As stated in QSR #47, the Annual Report, all personnel of the Technology Use Studies Center (TUSC), in their own way, make contributions which cumulatively result in a participative effort toward preparation and completion of the various required status reports. The Final Report of NASw-3007 is no exception.

In acknowledging the detail and written report content, credit is given to Mr. Bill Dodd and Mr. Ron Marshall, Industrial Specialists, and to Mrs. Susan West, Administrative Assistant/Secretary.

Other TUSC personnel participating in the task assigned to the Center include Mr. A. M. Moore, Editor, General Aviation News Letter; Mr. Owen Grimes, Technical Operations Specialist; Russell Henry and Paul Salas, Information Retrieval Specialists; Sherry Rider and Teresa Smith, Clerical Assistants; C. Henry Gold, Director, and Robert E. Oliver who will become Director effective July 1, 1978.

C. Henry Gold

July, 1978

SUMMARY

Article III of NASA Contract NASw-3007 requires that a Final Report be submitted by the Technology Use Studies Center (TUSC) by December 31, 1977. However, the TUSC Director was advised by the NASA TU Program Office and the Contracting Officer that the Center should begin planning on the way and means for TUSC to commence conversion to a standard fee-charging Industrial Applications Center (IAC). In doing so, a proposal was submitted for an extension of NASw-3007 to provide for six months additional effort for the operation of the Center and provide for a transition time-period.

The contract was modified accordingly, therefore, Article II, Period of Performance, was changed by the Contract Modification (paragraph 3); i.e., . . . "shall be completed by June 30, 1978." Likewise, Article III Reporting Requirements/Distribution was also changed by the modification of NASw-3007. The contract required a Final Report on or before December 31, 1977, but the date of June 30, 1978, is substituted "in lieu thereof" in paragraph 4 of the Contract Modification.

In the interest of continuity of the various TUSC reports, an Annual Report, in lieu of the Final Report was submitted in December, 1977. It was Quarterly Status Report No. 47 (1977 Annual Report). That report follows the usual format of our final reports and it provides a record of Center functions and activities on the basis of a calendar year. The reader is encouraged

to refer to the TUSC 1977 Annual Report (QSR #47), QSR #46, QSR #45, and QSR #44 for the detailed records of TUSC work performance during January 1, 1977, to December 31, 1977.

This NASw-3007 Final Report will summarize the above reports and provide routine work performance information of the Center during (what normally would have been) the first two quarters of a follow-on contract. In the first quarter of the extension period (January-March), an all-time, record high number of searches was processed and completed by TUSC personnel--122 searches; the second quarter of the extension period (April-June) was also a high production quarter--108 searches. The search production during the first two quarters of 1978 exceeds the production record of the Center during any six-month operational period of TUSC's fourteen year history. NASw-3007, as previously mentioned, covered six quarters of operation. The searches completed per quarter are as follows:

January-March 1977	---	87 searches
April-June 1977	---	64 searches
July-September 1977	---	101 searches
October-December 1977	---	63 searches
January-March 1978	---	122 searches
April-June 1978	---	108 searches

Expressed differently, the search performance of TUSC during the contract period averages 30 searches per month which represents an increased search capability of approximately 45 percent. Utilization of NASA's RECON and other computerized data files accounts for the Center's increased capability. Chapter II of the previously-mentioned 1977 Annual Report provides background information and historical data relevant to the search accomplishments of TUSC.

A numerical listing of the searches processed by the Center from January 1 through June 30, 1978, is set forth in Appendix B--it is a continuation of the information in Appendix B of the 1977 Annual Report (pages 23-50). Searches 2257 through 2377 were completed during the first quarter (January-March) of the extension and searches 2378 through 2485 were completed in the second quarter (April-June) of the extension. Searches completed by TUSC in cooperation with the SBA Technical Assistance Officer in Dallas represent more than 75 percent of the Center's workload. The cooperative effort is consistent with the 1977 work performance and the usual 70 to 80 percent search effort on behalf of SBA clients as has been routinely reported by TUSC.

As a matter of record, this is not only a contract Final Report but it is the final report of the Technology Use Studies Center. On July 1, 1978, the Center will be known as the Kerr Industrial Applications Center (KIAC), and it will serve the State of Oklahoma and north Texas including Dallas and Fort Worth (see page 60).

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Chapter I

TUSC CLIENTELE INFORMATION

As indicated in the report summary, TUSC's last report, QSR #47 was the 1977 Annual Report, and information therein is set forth under the format of a Final Report. Since there has been little or no change in TUSC Clientele Information, the reader is referred to the 1977 Annual Report for information that is routinely reported in this chapter of a Final Report.

Chapter II

DISSEMINATION AND ASSISTANCE

> The contractor shall disseminate information and provide technical assistance to industrial firms and other organizations.... This dissemination and assistance service shall be provided in a manner designed to bring about the utilization of NASA-generated technology by recipients and to promote a better understanding of the process by which such technology is made available... (Statement of Work, NASw-3007)

The Center responded to numerous inquiries from individuals as well as firms interested in the function, service, cost, etc., of TUSC. The requests were initiated as the result of two magazine articles, "NASA Technology Transfer" (Iron Age) and "NASA's Huge Treasure Chest of Information" (Nation's Business).

With reference to search production, the performance of TUSC, during the contract extension period (January 1-June 30) has been previously mentioned in the report summary. The 230 searches that were completed during the extended time period represent a record performance for the Center.

Page 9 of the TUSC Annual Report (QSR #47) not only provides a summary of annual search production (since 1971), but it sets forth client benefits information as well. During the contract extension period, the Center obtained varification of an additional 14 Class A client benefits and 19 Class B benefits. Thus, while functioning under NASw-3007, the Center has

documentation of a total of 43 Class A benefits and 67 Class B benefits. Class A benefits are synonymous with "technology transfer" since they represent instances wherein the client provides specific information as to a new product, time savings, money savings, better method, etc. For example:

Transfer 230 -- Mr. J. Reed Welker of the Applied Technology Corporation, Norman, Oklahoma, indicates that information obtained through TUSC on the subject of skin burns was very helpful. Reports not available through the Oklahoma University Library were ordered from NTIS (Page 40).

Transfer 231 -- (Search 2145)

Transfer 232 -- (Search 2223)

Transfer 233 -- (Search 2228)

Transfer 234 -- Mr. Richard M. Holland, Jr., president of AnaChem Services & Consultation, Inc., of Albuquerque, New Mexico, expresses his gratitude for the wind-related energy information and indicates that his company is in the process of construction of a manufacturing plant for the products (page 41).

Transfer 235 -- The president and founder of the Weed Instrument Co., Inc., gives NASA direct credit for the transfer of temperature sensing technology being successfully applied in the development of a new high efficiency coal gasification turbine. In regard to technology assistance provided by the SBA, this company provides documentation that new technology has created at least 10 new jobs at the facility in 1977 and projects 15 new jobs in 1978 (page 44).

Transfer 236 -- (Search 2250)

Transfer 237 -- (Search 2251)

Transfer 238 -- (Search 2252)

Transfer 239 -- (Search 2312)

Transfer 240 -- (Search 2313)

Transfer 241 -- (Search 2256)

Transfer 242 -- (Search 2315)

Transfer 243 -- (Search 2351)

Search requests that were instrumental in producing the 19 Class B Benefits were: Searches 2307 (see page 42), 2229 and 2232, 2225, 2230, 2220 and 2219, 2194 and 2204, 2177, 2217, 2240, 2253, 2272, 2308, 2292, 2293, 2283, 2284, 2288, 2356, and 2357.

The Center has received six "thank you" letters from the Small Business Administration (Region VI) in which TUSC is recognized for helping to make the SBA Technical Assistance Program a success. Verification of the above-mentioned benefits can be obtained through the Technical Assistance Officer in Dallas.

Correspondence included in Appendix C should give the reader good indications of the extent to which the above-mentioned magazine articles about NASA's TU Program have sparked the interest of prospective clients.

Searches and Assistance

Searches 2280, 2281, and 2286 -- An individual in Illinois inquired about U-2's, ion propulsion, and weightlessness. His contact with TUSC came about through the General Aviation News Letter. General, unrestricted, information on the U-2 aircraft was provided. Also various NASA report

abstracts on ion propulsion and the medical aspects of space flight were provided. The information retrieval team found 24 applicable report references on the subject of weightlessness.

Search 2282 -- Planets/Space/Rockets. This request was initiated by a student in Brooklyn, New York. Appropriate information was reproduced and forwarded.

Search 2300 -- OSHA regulations on handling hazardous (chemical) materials. This search was accomplished under faculty assistance. The OSHA standard was provided as well as were applicable OSHA pamphlets.

Search 2303 -- Requirements for emergency lighting in hazardous locations. The OSHA standard was provided.

Search 2307 -- Automatic, noninvasive blood measuring system. Provided client with abstract of N74-26626 and information about obtaining the NASA patent.

Search 2327 -- Planned missions for the Space Shuttle. A student in Monroe, Wisconsin, requested the information. Information from various NASA publications and other aerospace magazine articles was provided.

Searches 2336 and 2337 -- Use of earthworms for solid waste disposal. The BIOSIS data file was a good source of information for these searches and several other related search topics.

Search 2338 -- Energy efficient home. The SBA client who requested the information received thirty-seven applicable documents including information about, "The House that NASA Built."

Search 2343 -- Waterproofing concrete walls. This was only one of several search requests for information about waterproof concrete. Information acquired from the Portland Cement Association answered most of the inquiries.

Assistance -- In March, 1977, TUSC received a request for assistance concerning the when, where, and how as related to an Oil Symposium. It was to deal with the subject of state-of-the-art in oil recovery. The Center was able to tell the client not only the time and place of the Symposium (Tulsa) but how to register.

Probably the most unusual information request of this Center was a letter request from the Department of Defense (page 68). It was a survey type of inquiry relating to "military decision makers in their planning for the acquisition of major systems." It is probably one of the better justifications for the Center to change the organizational title to the Kerr Industrial Applications Center as mentioned in the report summary. The title Technology Use Studies Center was no doubt interpreted by the AFSC/PMX staff member as a center established to study the use of technology on a much broader scale than technology utilization and/or application.

A complete listing of searches completed during the extension period of NASw-3007 is provided in Appendix B, pages 18-35.

Chapter III

FACULTY INFORMATION SERVICES

> The Contractor shall continue to provide information ser- services to selected faculty research personnel in a variety of technical disciplines at Southeastern Oklahoma State University, Oklahoma State University, the University of Oklahoma, and other state colleges and universities. (Statement of Work, NASw-3007)

Much of the service by the Center, as reported in previous QSRs, relates to a graduate course, "Theory of Information Retrieval and Dissemination." TUSC encourages students to utilize the Center's library resource which not only helps the student with his immediate problem of gathering data for a research paper, but it is also an excellent way to introduce him to the NASA TU Program. Due to a faculty overload, the Business Department was not able to offer the course this semester; therefore, the service to faculty during the quarter indicates a sharp decline.

Nine searches are identifiable as faculty service: Searches 2276, 2300, 2329, 2345, 2388, 2396, 2402, 2420, and 2467.

Information on Astronaut Physical Training Program (Search 2329) was requested by a junior-level student at Towson State University, Towson, Maryland. He is employed as a Health Instructor and is a Physical Education major (pages 61-63). Six of the searches were accomplished for the faculty/staff of Southeastern Oklahoma State University. The President of the University

requested search 2276. It concerns explosion of tempered glass and the causes relating thereto. Information Retrieval Assistants were successful in retrieving two NASA report abstracts on the subject.

On page 14 of the TUSC 1977 Annual Report, the Center provided information about the Space Shuttle interest of Dr. John Wright. A formal proposal for space shuttle experimentation has been submitted. His goal is to conduct scientific studies of muscles in the weightless environment. In review of aerospace medical reports, Dr. Wright has noted that astronauts experience progressive atrophy of muscle tissue. Since he has had extensive research experience with muscular dystrophy, a disease in which degeneration of the muscles also occur, he believes that certain drugs which counteract the latter pathology may be applicable in the atrophy of weightlessness. Dr. Wright documented the benefits of NASA technology which is reported as TUSC Transfer 204. The information is also included in the 1977 Annual Report on pages 55-57. Correspondence between Dr. Wright and the Project Office at JSC has continued throughout the quarter and a formal proposal for a Space Shuttle scientific study has been submitted. The objective of the study is to determine the effect of various chemicals on the muscles of small animals.

Chapter IV

COOPERATION WITH OTHER AGENCIES

> The Contractor shall continue to work closely with and attempt to develop new cooperative efforts with (1) institutions operating under or in conjunction with the Oklahoma State Technical Services Program, (2) organizations established under the Public Works and Economic Development Act of 1965, and (3) other public and private organizations and institutions concerned with promoting the economic and technological development of the region. (Statement of Work, NASw-3007)

Small Business Administration

As mentioned in the Report Summary, the Center's cooperative exchange/interchange with the Technical Assistance Officer of SBA Region VI continues to be a favorable reflection of the transfer of technology. In support of the SBA's Technical Assistance Program, more than 80 percent of all searches processed during the contract extension period provided information for clients of the Small Business Administration.

Department of Labor

As indicated in the 1977 Annual Report and other Final Reports, TUSC does not function under a formal agreement with the DOL but the Center routinely provides information concerning OSHA Regulations and/or Standards--Searches 2300, 2303, 2305, 2421, and 2422 are examples of occupational

safety and health related inquiries to which the Center responded with appropriate OSHA references.

Department of Commerce

The DOC is the sponsoring agency of the University Business Assistance Center (UBAC). Searches 2388 and 2396 were accomplished at the request of a UBAC Field Representative.

Chapter V

GENERAL AVIATION NEWS LETTER

> The contractor shall prepare and distribute a newsletter directed to the general aviation audience. This newsletter should be issued quarterly during the period of performance of this contract. (Statement of Work, NASw-3007)

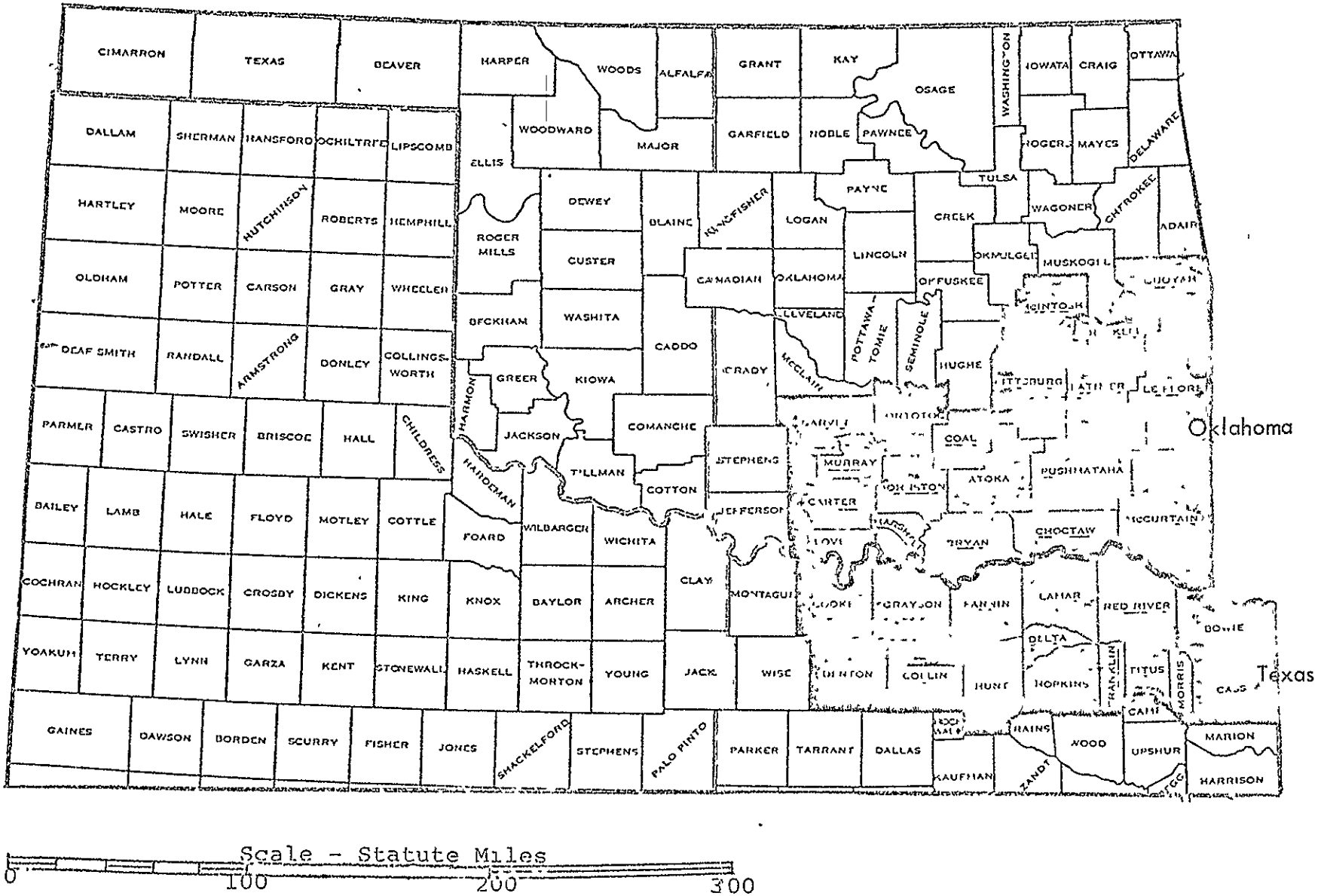
As required by the above work statement, two newsletters were prepared and distributed during the contract extension period--Vol. V No. 1 (February, 1978) and Vol. V No. 2 (May, 1978). These publications have been reproduced and are included in Appendix D.

The primary objective of this medium of information is to focus on the first "A" in NASA (aeronautics) and to be a vehicle through which the NASA TU Program and aerospace benefits are made known to the general public. Based upon the voluntary response from newsletter readers, the indication is that this medium of information is communicating the message of technology utilization. The reader is refereed to the 1977 Annual Report for numerous letters concerning the News Letter. The value of this means of technology transfer is great, but in order to conserve paper it was decided not to include these letters again in this Final Report. Correspondence received during the extension time-period is included (pages 144-154).

APPENDIX A

TUSC PROJECT AREA

TUSC PROJECT AREA



Scale - Statute Miles

0 100 200 300

APPENDIX B

SUMMARY CHARACTERISTICS OF TUSC TECHNICAL SEARCHES

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2257	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2258	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2259	Conversion of wind energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2260	Solar energy for heating and air conditioning	I-T	S. Charles Pierce, SBA	Dallas, TX
2261	Use of solar energy for hearing and air conditioning	I-T	S. Charles Pierce, SBA	Dallas, TX
2262	Solar energy for heating and air conditioning	I-T	S. Charles Pierce, SBA	Dallas, TX
2263	Conversion of solar energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2264	Energy conservation measures for use in existing and newly constructed buildings	I-T	S. Charles Pierce, SBA	Dallas, TX
2265	Energy conservation measures	I-T	S. Charles Pierce, SBA	Dallas, TX

I-S -- An individual student
I-T -- Any individual who is working in technology research for a government agency
I-F -- Any individual faculty member
I-O -- Any other individual who is not employed by a manufacturing firm, agency, or a school system

NOTE: Unless otherwise indicated, client is located in the State of Oklahoma.

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2266	Energy conservation	I-T	S. Charles Pierce, SBA	Dallas, TX
2267	Conservation of energy in manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2268	Energy conservation measures	I-T	S. Charles Pierce, SBA	Dallas, TX
2269	Methods and equipment used to set up a small anodizing operation for aluminum parts	I-T	S. Charles Pierce, SBA	Dallas, TX
2270	Equipment and procedures used in making small pastic advertising items by heat sealing vinyl	I-T	S. Charles Pierce, SBA	Dallas, TX
2271	Disposal or recycling of spent PCB etchant	I-T	S. Charles Pierce, SBA	Dallas, TX
2272	Candlemaking	I-T	S. Charles Pierce, SBA	Dallas, TX
2273	Solar energy for heating and air conditioning	I-T	S. Charles Pierce, SBA	Dallas, TX
2274	New products involving industrial cleaners, etc.	I-T	S. Charles Pierce, SBA	Dallas, TX
2275	Testing methods and information on PCB quality control	I-T	S. Charles Pierce, SBA	Dallas, TX
2276	Causes of tempered glass exploding	I-F	Dr. Leon Hibbs, President, SOSU	Durant
2277	Detecting small petroleum oil leaks	I-T	S. Charles Pierce, SBA	Dallas, TX
2278	Manufacturing of fragrances and deodorants in aerosal cans	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2279	SOTA, aerosol filling equipment	I-T	S. Charles Pierce, SBA	Dallas, TX
2280	U-2D aircraft	I-O	Ellis Henderson	Joliet, IL
2281	Ion Propulsion	I-O	Ellis Henderson	Joliet, IL
2282	Planets/Space/Rockets	I-O	Craig R. Hammerman	Brooklyn, NY
2283	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2284	Use of solar energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2285	Setting up and operating a gun drilling machine	I-T	S. Charles Pierce, SBA	Dallas, TX
2286	Medical aspects of space flight especially long-term weightlessness	I-O	Ellis Henderson	Joliet, IL
2287	SOTA, the development of turbidity meters	I-T	S. Charles Pierce, SBA	Dallas, TX
2288	Solid waste disposal	I-T	S. Charles Pierce, SBA	Dallas, TX
2289	Water purification involving reverse osmosis	I-T	S. Charles Pierce, SBA	Dallas, TX
2290	Use of polymer impregnated concrete in highway and bridge construction	I-T	S. Charles Pierce, SBA	Dallas, TX
2291	New products involving polymer impregnated concrete	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2291a	Emkephalina	I-F	Dr. Rick Wright, SOSU	Dallas, TX
2292	SOTA, centrifugal casting of bronze bearings and bushings	I-T	S. Charles Pierce, SBA	Dallas, TX
2293	Thermosetting plastic resins	I-T	S. Charles Pierce, SBA	Dallas, TX
2294	Wood surface coatings, polishes, removers, etc.	I-T	S. Charles Pierce, SBA	Dallas, TX
2295	Recycling scrap acrylic plastic sheet/shavings	I-T	S. Charles Pierce, SBA	Dallas, TX
2296	Methanol production from organic wastes	I-T	S. Charles Pierce, SBA	Dallas, TX
2297	Methods and equipment used to water-sand or wet-sand edges of plastic fabricated items	I-T	S. Charles Pierce, SBA	Dallas, TX
2298	Methods, equipment, and adhesives used to bond heavy acrylic sheets	I-T	S. Charles Pierce, SBA	Dallas, TX
2299	Solar heating and cooling a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2300	OSHA Regulations--chemicals, handling, use, and requirements for handling hazardous materials	I-F	Dr. Arnold Walker, SOSU	Durant
2301	Nickelplating small aluminum parts	I-T	S. Charles Pierce, SBA	Dallas, TX
2302	Energy conservation for a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2303	Government regulations requiring emergency lighting in hazardous locations	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2304	Bonding foil to polystyrene laminate permanently	I-T	S. Charles Pierce, SBA	Dallas, TX
2305	Inside/outside explosion-proof lighting for hazardous locations	I-T	S. Charles Pierce, SBA	Dallas, TX
2306	Industrial plant lighting that resists corrosion	I-T	S. Charles Pierce, SBA	Dallas, TX
2307	Automatic, noninvasive blood measuring system	I-O	Jack Grinovich	Bethany
2308	Energy conservation in a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2309	Techniques for eliminating bubbles when bonding acrylic sheets	I-T	S. Charles Pierce, SBA	Dallas, TX
2310	Setting up a contractor's quality control system	I-T	S. Charles Pierce, SBA	Dallas, TX
2311	Body monitor sensors equipment developed by NASA or DOD for pulse rate, blood pressure, etc.	I-T	S. Charles Pierce, SBA	Dallas, TX
2312	Additives to concrete tanks to make them waterproof	I-T	S. Charles Pierce, SBA	Dallas, TX
2313	Concrete tank for use as solar thermal storage tank	I-T	S. Charles Pierce, SBA	Dallas, TX
2314	Additives to concrete to make it pourable at temperatures below 27°F	I-T	S. Charles Pierce, SBA	Dallas, TX
2315	Water/sewage treatment plants suitable for 25-1000 housing and/or business units	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2316	Sterilizing and pouring bacterialogical media during the production process	I-T	S. Charles Pierce, SBA	Dallas, TX
2317	Equipment used in the production of bacterialogical culture	I-T	S. Charles Pierce, SBA	Dallas, TX
2318	Underwater acoustical devices	I-T	S. Charles Pierce, SBA	Dallas, TX
2319	Subsea acoustical operation instruments	I-T	S. Charles Pierce, SBA	Dallas, TX
2320	Saltwater to fresh water conversion system	I-T	S. Charles Pierce, SBA	Dallas, TX
2321	Saltwater corrosion data	I-T	S. Charles Pierce, SBA	Dallas, TX
2322	Solar energy for residential heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2323	Microcomputer system	38	Mike Newell, Badger Meter Co.	Tulsa,
2324	Noncorrosive saltwater injection pumps	I-T	S. Charles Pierce, SBA	Dallas, TX
2325	Equipment used to inspect the enamelled walls of castings to locate foundry defects	I-T	S. Charles Pierce, SBA	Dallas, TX
2326	SOTA, cement pumps	I-T	S. Charles Pierce, SBA	Dallas, TX
2327	Planned missions for the Space Shuttle	I-O	Glen Abbuehl	Monroe, WI
2328	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2329	Astronauts physical training program	I-O	David Hubler	Baltimore, MD

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2330	Pipeline configuration during offshore construction	I-T	S. Charles Pierce, SBA	Dallas, TX
2331	Offshore structure design	I-T	S. Charles Pierce, SBA	Dallas, TX
2332	Underwater batteries useable in offshore drilling	I-T	S. Charles Pierce, SBA	Dallas, TX
2333	Underwater batteries	I-T	S. Charles Pierce, SBA	Dallas, TX
2334	Raising earthworms and the uses for earthworms	I-T	S. Charles Pierce, SBA	Dallas, TX
2335	Raising earthworms and the uses for earthworms	I-T	S. Charles Pierce, SBA	Dallas, TX
2336	Use of earthworm for refuse or solid waste disposal	I-T	S. Charles Pierce, SBA	Dallas, TX
2337	Use of earthworm for refuse or solid waste disposal	I-T	S. Charles Pierce, SBA	Dallas, TX
2338	Energy efficient home	I-T	Carl Echols, SBA	Oklahoma City
2339	Method used by astronauts to dispose of sewage	I-T	S. Charles Pierce, SBA	Dallas, TX
2340	High energy discharge mechanisms	I-T	S. Charles Pierce, SBA	Dallas, TX
2341	Waterproofing concrete walls	I-T	S. Charles Pierce, SBA	Dallas, TX
2342	Preparing concrete mix vs. readymix	I-T	S. Charles Pierce, SBA	Dallas, TX
2343	Production, storage, and uses of methane gases	I-O	Earl Beck	Stringtown
2344	Skin burns as it relates to burn damage/death	38	Applied Technology Corporation	Norman

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2345	Landsat	I-F	Dr. Connie Taylor, SOSU	Durant
2346	Additives to make concrete tanks waterproof	Const	Marshall Builders	Durant
2347	Additives to make concrete pourable at temperatures below 27°F	Const	Marshall Builders	Durant
2348	Using a concrete tank for solar thermal storage	Const	Marshall Builders	Durant
2349	Devices that utilize static electricity discharges as an energy source	I-T	S. Charles Pierce, SBA	Dallas, TX
2350	Design and operation of modern marine sanitation devices	I-T	S. Charles Pierce, SBA	Dallas, TX
2351	Reduction of noise level relating to plastic injection molding machines	I-T	S. Charles Pierce, SBA	Dallas, TX
2352	List of component manufacturers for solar systems	I-T	S. Charles Pierce, SBA	Dallas, TX
2353	Making concrete tanks more waterproof	Const	Vails Inc.	Durant
2354	Solar thermal storage in concrete tanks	Const	Vails Inc.	Durant
2355	Making concrete pourable at temperatures below normal	Const	Vails Inc.	Durant
2356	Use of solar energy for heating and cooling	I-T	S. Charles Pierces, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2357	Conversion of wind energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2358	Conversion of wastes for production of methane gas	I-T	S. Charles Pierce, SBA	Dallas, TX
2359	Current listing of component manufacturers for solar energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2360	Use of hydrogen gas as an alternate to fossil fuels	I-T	S. Charles Pierce, SBA	Dallas, TX
2361	Production methods of hydrogen for energy use	I-T	S. Charles Pierce, SBA	Dallas, TX
2362	Concrete tank for use as solar thermal storage tanks	Const	Rustin Concrete	Durant
2363	Additives to concrete so it may be poured at low temperatures	Const	Rustin Concrete	Durant
2364	Additives to concrete to make tanks more waterproof	Const	Rustin Concrete	Durant
2365	Methods and equipment to weld A500 Grade B and TT 70 steel rectangular and square steel tubing	I-T	S. Charles Pierce, SBA	Dallas, TX
2366	Use of solar energy for hearing and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2367	Solidago - Bibliography	I-F	Dr. Connie Taylor, SOSU	Durant
2368	Production/manufacturing of silicone oil/grease	I-T	S. Charles Pierce, SBA	Dallas, TX
2369	Formulated waterproof polyvinyl acetate or ethyl alcohol monomer base adhesive	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2370	Production of polyvinylchloride pipe overwrapped with fiberglass	I-T	S. Charles Pierce, SBA	Dallas, TX
2371	Producing fiberglass filament winding and fiberglass layup materials	I-T	S. Charles Pierce, SBA	Dallas, TX
2372	Types of lightweight concrete aggregates	I-T	S. Charles Pierce, SBA	Dallas, TX
2373	SOTA, production of structural molded fiberglass	I-T	S. Charles Pierce, SBA	Dallas, TX
2374	Enzyme immobilization	I-T	S. Charles Pierce, SBA	Dallas, TX
2375	Concentration and drying techniques for bacterial cultures	I-T	S. Charles Pierce, SBA	Dallas, TX
2376	Methods and equipment used in the concentration and drying of extra cellular enzymes	I-T	S. Charles Pierce, SBA	Dallas, TX
2377	Hydraulic fluids and thermal expansion	I-T	S. Charles Pierce, SBA	Dallas, TX
2378	Chemical treatment of oil waste and oil field drilling sludge	I-T	S. Charles Pierce, SBA	Dallas, TX
2379	SOTA, oil field drilling fluids	I-T	S. Charles Pierce, SBA	Dallas, TX
2380	Solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2381	SOTA, kidney dialysis equipment	I-T	S. Charles Pierce, SBA	Dallas, TX
2382	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2383	Secondary petroleum recovery method of water flood	I-T	S. Charles Pierce, SBA	Dallas, TX
2384	Secondary petroleum recovery by fire flood	I-T	S. Charles Pierce, SBA	Dallas, TX
2385	Secondary petroleum recovery by steam flood	I-T	S. Charles Pierce, SBA	Dallas, TX
2386	Power oil flood systems to recover petroleum	I-T	S. Charles Pierce, SBA	Dallas, TX
2387	Uranium or associated mineral deposits in certain areas	I-T	S. Charles Pierce, SBA	Dallas, TX
2388	SOTA, use of fly-ash	I-T	David Bradford, University Business Assistance Center	Tahlequah
2389	Noncorrosive metal coating	27	Larry L. Slot Publishing Co.	Grand Rapids, MI
2390	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2391	Oil well drilling free water knockout agents	I-T	S. Charles Pierce, SBA	Dallas, TX
2392	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2393	Corrosion and scale inhibitors used in oil well drilling operations	I-T	S. Charles Pierce, SBA	Dallas, TX
2394	Electric automobiles	I-T	S. Charles Pierce, SBA	Dallas, TX
2395	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2396	Ion plating	I-T	David Bradford, University Business Assistance Center	Tahlequah

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2397	Electrical discharge machining of thin-materials and chemical milling techniques for stainless steel	I-T	S. Charles Pierce, SBA	Dallas, TX
2398	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2399	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2400	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2401	Converting wind energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2402	Underground construction	I-F	Lahoma Clark, SOSU	Durant
2403	Producing epoxy resin for structural plastic components	I-T	S. Charles Pierce, SBA	Dallas, TX
2404	Van deGraaff generators	I-T	S. Charles Pierce, SBA	Dallas, TX
2405	Electrical cabling	I-T	S. Charles Pierce, SBA	Dallas, TX
2406	Solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2407	Using solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2408	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2409	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2410	Solar energy for heating and air conditioning	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2411	Solar components manufacturers	I-T	S. Charles Pierce, SBA	Dallas, TX
2412	SOTA, development of solar cells	I-T	S. Charles Pierce, SBA	Dallas, TX
2413	Solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2414	Recently developed products using plexiglass materials	I-T	S. Charles Pierce, SBA	Dallas, TX
2415	Coating methods and materials used for coating corrugated galvenized metal pipe	I-T	S. Charles Pierce, SBA	Dallas, TX
2416	SOTA, development of photoelectric cells	I-T	S. Charles Pierce, SBA	Dallas, TX
2417	SOTA, development of photovoltaic cells	I-T	S. Charles Pierce, SBA	Dallas, TX
2418	Production of methane gas by bioconversion of solid wastes	I-T	S. Charles Pierce, SBA	Dallas, TX
2419	Types of solar collectors now available	I-T	S. Charles Pierce, SBA	Dallas, TX
2420	Career guidance institute	I-F	C. Henry Gold, SOSU	Durant
2421	Occupational health hazards of benzene fumes	I-T	S. Charles Pierce, SBA	Dallas, TX
2422	Methods and equipment used to monitor benzene fumes	I-T	S. Charles Pierce, SBA	Dallas, TX
2423	Industrial sludge analysis methods	I-T	S. Charles Pierce, SBA	Dallas, TX
2424	Contaminants found in lake and river sediments	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2425	Organic contaminants found in lakes, ground water, rivers, and fish	I-T	S. Charles Pierce, SBA	Dallas, TX
2426	Woodburning fireplace design	I-T	S. Charles Pierce, SBA	Dallas, TX
2427	Pesticide and herbicide contamination of lakes, ground water, rivers, and fish	I-T	S. Charles Pierce, SBA	Dallas, TX
2428	EPA requirements or restrictions on use of coal having sulfur content	I-T	S. Charles Pierce, SBA	Dallas, TX
2429	Methane gas production from industrial and agricultural wastes	I-T	S. Charles Pierce, SBA	Dallas, TX
2430	Methods and equipment used to identify and analyze water pollutants	I-T	S. Charles Pierce, SBA	Dallas, TX
2431	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2432	Conservation of energy in a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2433	Energy conservation in manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2434	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2435	Conservation of energy in a plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2436	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2437	Urethane/epoxy resin; curing both at approximately same rate/room temperature if mixed together	30	Johns-Mansville	Denison, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2438	Electroless nickel plating	I-T	S. Charles Pierce, SBA	Dallas, TX
2439	Information on plastic materials that are optically clear	I-T	S. Charles Pierce, SBA	Dallas, TX
2440	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2441	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2442	Using solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2443	Concrete curing compounds improving waterproofing and smoothness characteristics of concrete	I-T	S. Charles Pierce, SBA	Dallas, TX
2444	Energy efficient house	I-O	D. C. Gann, Engineering Assoc.	Stillwater
2445	Making concrete storage tanks saltwater resistant	I-T	S. Charles Pierce, SBA	Dallas, TX
2446	Solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2447	Information on solar collector design	I-T	S. Charles Pierce, SBA	Dallas, TX
2448	Plasma cutting and machining of metals	I-T	S. Charles Pierce, SBA	Dallas, TX
2449	Information new paint and varnish products	I-T	S. Charles Pierce, SBA	Dallas, TX
2450	Uses for Americium 241	I-T	S. Charles Pierce, SBA	Dallas, TX
2451	Laser cutting of metals	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2452	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2453	High pressure filament wound tanks	I-O	David R. Seeds	Plano, TX
2454	Removing hard carbon deposits from iron/steel	I-T	S. Charles Pierce, SBA	Dallas, TX
2455	Conversion from manual to numerical controlled machining of metal	I-T	S. Charles Pierce, SBA	Dallas, TX
2456	Changing from manual machining of metals to	I-T	S. Charles Pierce, SBA	Dallas, TX
2457	Latest methods and equipment used to manufacture block and crushed ice	I-T	S. Charles Pierce, SBA	Dallas, TX
2458	Use of "siline" for waterproofing concrete surface of highway bridges	I-T	S. Charles Pierce, SBA	Dallas, TX
2459	Physical characteristics of Americium 241	I-T	S. Charles Pierce, SBA	Dallas, TX
2460	Numerically controlled equipment for machining metals	I-T	S. Charles Pierce, SBA	Dallas, TX
2461	Chemical characteristics of Americium 241	I-T	S. Charles Pierce, SBA	Dallas, TX
2462	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2463	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2464	Conservation of energy in a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2465	Conservation of energy in a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2466	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2467	Converting an atmospheric heat pump to well water heat pump	I-F	Pierce Martin, SOSU	Durant
2468	Use of solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2469	Quality control systems for a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2470	Information on the GAW-1 and GAW-2 airfoil	I-T	S. Charles Pierce, SBA	Dallas, TX
2471	Conservation of energy in a manufacturing plant	I-T	S. Charles Pierce, SBA	Dallas, TX
2472	Methods and equipment used to compression mold tetrafluoroethylene plastic	I-T	S. Charles Pierce, SBA	Dallas, TX
2473	Quality control in the printing and die cutting industry	I-T	S. Charles Pierce, SBA	Dallas, TX
2474	Materials used to manufacture 5-gallon plastic pails	I-T	S. Charles Pierce, SBA	Dallas, TX
2475	Use and safety of polyethylene pipe in connection with natural gas transmission	I-T	S. Charles Pierce, SBA	Dallas, TX
2476	Reclaiming or cleasing land from oil field pollutants	I-T	S. Charles Pierce, SBA	Dallas, TX
2477	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX

SEARCH NUMBER	SEARCH SUBJECT	SIC	CLIENT	LOCATION OF CLIENT
2478	Conversion of wind energy into useful energy	I-T	S. Charles Pierce, SBA	Dallas, TX
2479	Information of ATP method of detecting and counting bacteria growth in oil field waters	I-T	S. Charles Pierce, SBA	Dallas, TX
2480	Solar energy for heating and air conditioning	I-T	S. Charles Pierce, SBA	Dallas, TX
2481	Solar energy for heating and cooling	I-T	S. Charles Pierce, SBA	Dallas, TX
2482	SOTA, arc and heliarc welding			
2483	SOTA, MIG metal-arc, intert-gas-shielded welding	I-T	S. Charles Pierce, SBA	Dallas, TX
2484	Optical stablization for hand-held telescopes or binoculars	I-O	Bill Lowrey	Mansfield, LA
2485	Technology for making epoxy molds or tooling used for short runs of investment castings	I-T	S. Charles Pierce, SBA	Dallas, TX

APPENDIX C

TRANSFER AND IMPACT REPORTS

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

April 14, 1978

KIAC (formerly TUSC) has been informed by the SBA Region VI Technology Assistance Officer that documentation has been received by that office which verifies benefits as noted below that resulted from the various KIAC/NASA searches as indicated:

Class A Benefit - See attached letter.
(TRANSFER 230)

Class A Benefit - TUSC Search #2145
(TRANSFER 231)

Class A Benefit - TUSC Search #2223
(TRANSFER 232)

Class A Benefit - TUSC Search 2228
(TRANSFER 233)

Class A Benefit - See attached letter.
(TRANSFER 234)

Class B Benefit - TUSC Search #2219
TUSC Search #2220

Class B Benefit - TUSC Search #2194
TUSC Search #2199
TUSC Search #2204

Class B Benefit - TUSC Search #2197

Class B Benefit - TUSC Search #2217

Class B Benefit - TUSC Search #2232
TUSC Search #2229

(Continued)

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Class B Benefit - TUSC Search #2225

Class B Benefit - TUSC Search #2230

Class B Benefit - TUSC Search #2240

Class B Benefit - TUSC Search #2253

Class B Benefit - See attached letter.

Actual documentation for all but three benefits cannot be provided because the SBA Technical Assistance Officers, under instruction from SBA headquarters, have been instructed to use a new form (SBA Form 941) to report assistance provided clients. The new form contains the statement: ". . . your reply will not be furnished to any other Government agency."

APPLIED TECHNOLOGY CORP.

1215 WESTHEIMER DR
NORMAN, OK 73069

P O BOX FF
NORMAN, OK 73070

405 - 364-5431

APR 3 1978

March 28, 1978

Mr. Bill Dodd
Technology Use Studies Center
Southeastern Oklahoma State University
Durant, OK 74701

Dear Mr. Dodd:

We have received the results of Search No. 2344 for information on skin burns and have found it very helpful. Most of the references were available in the University of Oklahoma library; we ordered copies of others from NTIS.

The search was particularly useful because it covered publications that are not readily available to us.

We especially appreciate your prompt response.

Sincerely,

J. Reed Welker

JRW:can

TRANSFER 230

Search #2344

AnaChem Services & Consultation, Inc.

POB 917 • Albuquerque, New Mexico 87102 • (505)255-4987

S. Charles Pierce 1/3/78

Small Business Administration

1720 Regal Row

Dallas, TX 75235

Dear Mr. Pierce:

Thank you for the literature searches the SBA sent me on solar energy and wind energy applications. This information has proven to be invaluable inasmuch as my Company plans the construction of a manufacturing plant for our products. If there is anyone you would like me to send a letter of thanks to, please let me know. I feel the SBA rarely gets the praise it deserves from the private sector.

Thank you for your kind service to my business needs.

Sincerely,

Richard M. Holland, Jr.

Richard M. Holland, Jr.

President

RMH/sf

TRANSFER 234

- TUSC Search #2251
- NASA Lit. Search #37131
- TUSC Search #2252
- TB 75-10136
- TB 75-10147
- NASA Lit. Search #37126
- TUSC Search #2250
- TB 75-10189
- NASA Lit. Search #37127

CORPORATE RECRUITERS

March 31, 1978

Mr. Bill Dodd
Technology Use Studies Center
Southeastern Oklahoma State University
Durant, Oklahoma 74701

Dear Bill:

Perhaps a bit belatedly but certainly to you and your organization I would like to say a word of thanks. Your help in providing me with follow up information on the NASA project that I spoke with you about has been greatly appreciated.

Shortly we will know whether it will finally materialize into a viable business entity.

It's a refreshing experience to see an entity so closely connected to the government function as rapidly and as efficiently as you folks have. Hat's off to you.

Sincerely,

Jack Grinovich

Jack Grinovich

JG/lk

Search #2307

2200 Classen Blvd • Oklahoma City, Okla 73106 • (405) 525-5544

KERR INDUSTRIAL APPLICATIONS CENTER

July 19, 1978

KIAC has been informed by the SBA Region VI Technology Assistance Officer that documentation has been received by that office which verifies benefits as noted below that resulted from the various KIAC/ NASA searches as indicated:

Class A Benefit - See attached letter	TRANSFER 235
Class A Benefit - KIAC Search #2250	TRANSFER 236
Class A Benefit - KIAC Search #2251	TRANSFER 237
Class A Benefit - KIAC Search #2252	TRANSFER 238
Class A Benefit - KIAC Search #2312	TRANSFER 239
Class A Benefit - KIAC Search #2313	TRANSFER 240
Class A Benefit - KIAC Search #2256	TRANSFER 241
Class A Benefit - KIAC Search #2315	TRANSFER 242
Class A Benefit - KIAC Search #2351	TRANSFER 243

Class B Benefit - KIAC Search #2272
Class B Benefit - KIAC Search #2308
Class B Benefit - KIAC Search #2292
Class B Benefit - KIAC Search #2293
Class B Benefit - KIAC Search #2284
Class B Benefit - KIAC Search #2283
Class B Benefit - KIAC Search #2288
Class B Benefit - KIAC Search #2356
Class B Benefit - KIAC Search #2357

Actual documentation cannot be provided because the SBA Technical Assistance Officers, under instruction from SBA headquarters, have been instructed to use the new form, SBA Form 941, to report assistance provided clients. The form contains the statement, ". . . your reply will not be furnished to any other Government agency."

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

April 27, 1978

Mr. Charles Pierce P.E.
Small Business Admin.
1100 Commerce
Dallas, Texas 75202

Dear Mr. Pierce:

A few words of appreciation for your enormous help in helping us locate t right N.A.S.A. agency that had the high technological information that we so c perately needed to design the proper temperature sensing device for use in the developement of the new high efficiency coal gasification turbine.

For your information, you created at least 10 new jobs ~~available~~ here las year and perhaps create 15 new jobs this year. Again many thanks.

Very truly yours,

WEED INSTRUMENT COMPANY, INC.

Rodolfo B. Martinez
(founder)

RBM/dc

TRANSFER 235

P O BOX 549 200 DEPOT ST ELGIN, TEXAS 78621 PHONE (512) 285-3411

Ellis A Henderson
Box 112-C0615
Joliet, Ill. 60434

A. M. Moore, Editor
Aviation Technical News
Southeastern Oklahoma State University
Durant, Oklahoma 74701

Dear Mr. Moore

Received your letter dated 12-16-77. Also the enclosed latest - Aviation Technical News; Thanks Very Much. Thoroughly enjoyed it. My only criticism is, it was so good I couldn't get enough. I wet my thirst, and only heighten my desire for more so I've come back for second's (Smile).

I would like to know can I get some information on the infamous "U-2" spy plane that was captured by the Russians. I'm seeking information like how high it flies, its speed; special instrumentation such as its spying devices, its cameras, and test data.

In the newsletter two subject matter I would like to get more detail on — Battery Power (NASA TP 1023) and Space Engine. (Ion Rocket engines) a research report from Langley.

Is it possible to a Computer Retrieval listing of medical research reports dealing with adverse effects, flights and lengthy stays in the outer atmosphere that a outer space scientific team would encounter.

Also would appreciate any brochures about the Technology use Studies Center. Such as Courses offered, and more about its functions.

I hope, I haven't requested too much, or making myself a burden. When there is more important work to be done.

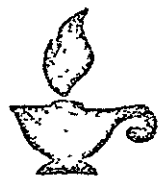
Any help will be - Most Appreciated

Thank You

Sincerely

Ellis A Henderson

TECHNOLOGY USE STUDIES CENTER



January 26, 1978

Mr. Ellis Henderson
Box 112 - CO 1615
Joliet, Illinois 60434

Dear Mr. Henderson:

Your kind remarks in your recent letter about our General Aviation News Letter are well received. Thank you very much!!

Enclosed is general information about the U-2 aircraft. It provides some of the information that is of interest to you. We do not have access, however, to information as to its special instrumentation, camera equipment, and/or other "spying devices."

Enclosed also is the abstract of TP-1023 about which you inquired. Ordering information for this publication is noted at the bottom of the page. We have received only one copy of the publication, but we can make it available to you on a library loan if you prefer not to purchase the report.

The information you read in the News Letter entitled "Space Engine" was taken from an article that appeared in a Langley Field Center "in-house" publication. As indicated, "ion propulsion" is not a recent discovery. I hope the enclosed information on the subject will give you the details you want.

We have processed a request for a computer search of medical research reports; and as soon as the search has been completed, we will forward the results, if any, to you.

We do not have a brochure on TUSC. The Technology Use Studies Center (TUSC) functions as a part of NASA's Technology Utilization program network established for information dissemination to the public. Currently, TUSC is assigned to a geographical area including 19 counties in southeast

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Oklahoma and 15 counties in northeast Texas. The network and various facilities throughout the United States are explained in the enclosure "NASA facilitates technology transfer." TUSC was established in 1964 with a specific task of finding the way and means for increasing the utilization of new technology in a typical nonurban area.

Thank you again for your kind remarks. Please do not hesitate to contact us whenever you feel we can be of service to you.

Sincerely,

A. M. Moore, Editor
Aviation Technical News

AMM/sgw
Enclosures

799 East 18th Street
Brooklyn, N.Y. 11230
December 14, 1977

Technology Use Studies
Center
Southeastern State
University
Durant, Oklahoma
74701

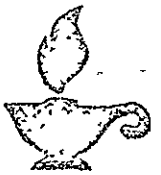
To Whom It May Concern,

I am very interested in the field of science, especially aeronautics. Please send me some information about space, rockets, the planets, etc.

Thank you very much.

Sincerely Yours,
Craig R. Hammerman

TECHNOLOGY USE STUDIES CENTER



January 26, 1978

Mr. Craig R. Hammerman
799 East 18th Street
Brooklyn, New York 11230

Dear Craig:

We are answering your letter of December 14, and we hope that the enclosed information will satisfactorily give you that which you are seeking relative to planets, space, and rockets. The information is from our encyclopedia on science and technology. Most recently published encyclopedias have good information on these subjects as well as the earth, moon, various planets, outer space, space flight, astronauts, flight, etc.

Thank you for contacting TUSC and do not hesitate to write if you have need for other information.

Sincerely,

Bill Dodd
Senior Industrial Specialist

BD/sw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Please send literature about your services.

Mail to: AnaChem Services &
Consultation, Inc.

POB 947

Albuquerque, NM 87103

TECHNOLOGY USE STUDIES CENTER

January 27, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

AnaChem Services & Consultation, Inc.
P. O. Box 947
Albuquerque, New Mexico 87102

Gentlemen:

Thank you for your recent inquiry about the function and services of the Technology Use Studies Center (TUSC). This Center, like TAC in Albuquerque, is a part of the NASA network established for the purpose of speeding the technology transfer process--especially space technology.

Dr. Stan Morain is the director of TAC and he can provide you with first-hand information about NASA's Technology Utilization program. I am enclosing relevant information about the program. It was included in the NASA annual report, "Spinoff 1977."

After reviewing the material and visiting with Dr. Morain and/or other TAC personnel, we would be pleased to furnish you with additional information should you have need for it.

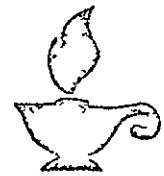
Sincerely yours,

C. Henry Gold

C. Henry Gold
Director

CHG/sgw
Enclosure

TECHNOLOGY USE STUDIES CENTER



February 8, 1978

Mr. Ron Hogan
State Legislative Council
Capital Complex
Oklahoma City, OK 73105

Dear Mr. Hogan:

The Technology Use Studies Center (TUSC) is pleased to respond to your request for additional information about its services and capability to respond to technical inquiries.

TUSC was established in 1964 and serves as part of NASA's nationwide network that works for the expressed purpose of making information of a technical nature available to everyone. This function helps to fulfill an important provision set forth in the Space Act of 1958. It was the intention of the Congress and the President that the widest practicable and appropriate dissemination of NASA's research activities and results thereof be made available to the public.

This Center was assigned the geographical area including 19 counties of southeastern Oklahoma and 15 counties of northeast Texas specifically to study various ways and means to increase the utilization of technology in a typical non-urban region.

Our contractual work statement provides for cooperative exchange of information with city, state, and federal agencies. For example, approximately 70 percent of our search effort is done at the request of the Region VI SBA technical assistance officer in Dallas. He works closely with small business establishments in Oklahoma, Texas, New Mexico, Arkansas, and Louisiana. We also cooperate with other institutions of higher education, especially Oklahoma State University and the University of Oklahoma. It would, therefore, be well within the scope of our work to provide information to state legislators, committees, and/or staff members should a research office such as the Pennsylvania LORL be established to form an Oklahoma legislative-university link.

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Included in this letter are the NASA guidelines for the overall operation of the various centers such as TUSC, information about the NASA network and technology transfer, our 1976 annual report, and the most recent Quarterly Status Report.

Sincerely,

C. Henry Gold
Director

CHG/sgw
Enclosures

TECHNOLOGY USE STUDIES CENTER

February 8, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

Unimar, Inc
Troup
Texas 75789

Gentlemen:

In noting that your firm manufacturers various products using plastic materials for automotive accessories, are plastic funnels included in your line of products?

On behalf of an individual residing here, we are interested in knowing what firms produce this item. The Technology Use Studies Center (TUSC) functions under the auspices of NASA as a technical information dissemination center and, as you can see, we attempt to "field" all questions.

If you do not manufacture plastic funnels, perhaps you could provide us with a list of firms that do.

Sincerely,

William Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw

We Do manufactor plastic funnels in the standard sizes

Joe Ed Phillips

TECHNOLOGY USE STUDIES CENTER

February 16, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Mr. J. H. Phillips
Unimar, Inc.
P. O. Box 661
Troup, TX 75789

Dear Mr. Phillips:

We appreciate your early response relative to our inquiry as to whether or not plastic funnels are included in your line of products.

The inquiry was made for Mr. A. D. Harkey, an automobile repairman here in Durant. He has a handmade, prototype model of a funnel that is not currently on the market. We believe, as he does, that the funnel has good market potential. Not only oil company service station operators, but the growing number of individuals who are now doing their own oil changes, include those who would make up the market.

Mr. Harkey has not applied for a patent. He would much rather enter into an agreement with a firm, such as Unimar, on the basis of receiving a consideration for funnels that are produced and sold.

If you are interested in adding this highly innovative funnel to your line of products, you can reach Mr. Harkey at:

A. D. Harkey Front-end Alignment Shop
North of City
Durant, OK 74701 Telephone: (405) 924-5199

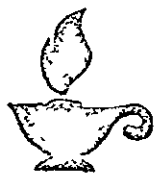
The Technology Use Studies Center also offers its "good offices" to assist you and/or Mr. Harkey in any way possible on this matter.

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw
cc: Mr. A. D. Harkey

TECHNOLOGY USE STUDIES CENTER



February 17, 1978

Solar Assist Corporation
P. O. Box 979
Lawrence, Kansas 66044

Gentlemen:

This letter is to acknowledge receipt of the solar collector fabric sample and duplicated copy of information about it.

As an information dissemination point, TUSC frequently receives questions that pertain to the state-of-the-art in solar energy developments. The referenced information will be included in the packet of materials we normally provide in response to such inquiries. Data available to us consists primarily of that which we obtain through the NASA data bank; therefore, anything developed and utilized commercially is most helpful.

If you have other information that you could provide relative to commercially available solar systems for business, industry, or home use and various firms that produce solar systems, we would appreciate your sharing it with us.

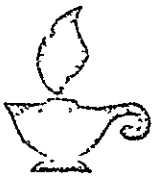
Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)



March 13, 1978

Dr. Edmond Howie, Director
Knowledge Availability Systems Center
University of Pittsburgh
Pittsburgh, PA 15260

Dear Ed:

We do not take the magazine (Flight International) which you referenced in your recent telephone call regarding man-made islands. Thus far, we have not been able to locate the article in a library to which we have access. Oklahoma State University is still looking through their indexes; we should hear from them soon.

Through our associate in SBA, we contacted the EPA personnel at headquarters in North Carolina. They gave your question a two-day effort but were not able to find pertinent information.

Engineering News-Record magazine was checked back through 1976 for articles pertinent to man-made fills for airports and towns. The four items retrieved are attached. We think that Chicago and other lakeside cities have made studies for building airports on man-made islands.

Try us again; we will try to be more resourceful.

Sincerely,

C. Henry Gold
Director

CHG/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Southeastern Oklahoma State University
DURANT, OKLAHOMA

LEON HIBBS
PRESIDENT

February 21, 1978

Headquarters Contracts Division
National Aeronautics & Space Administration
Washington, DC 20546

Gentlemen:

For the purpose of documenting the official contract file, Southeastern Oklahoma State University has determined that the organizational title of the Technology Use Studies Center (TUSC) should be changed. We are pleased with the performance of TUSC as a NASA Indusrrial Application Center that has functioned since 1964 as an experiment to finding the way and means to increase the utilization of technical information in a typical non-urban area.

However, I believe the change in title will help to emphasize the change in the Center's new mode of operation. Furthermore, it is deemed appropriate for the purpose of highlighting its new role within the NASA Technology Utilization network of facilities established to assist in the technology transfer process.

With your concurrence, TUSC will henceforth be known as the Kerr Industrial Application Center (KIAC). This change will not only emphasize the new role for this Center, but more importantly it is a belated but proper recognition of the contributions made to our Nation's aerospace program by the late Oklahoma Senator Robert S. Kerr. Senator Kerr served as the first Chairman of the Aerospace Committee and was instrumental in the drafting and passage of the Space Act of 1958.

If you concur with this request, please make the appropriate change in our 1978 contract. Also the publisher(s) of the NASA Tech Brief and the Spin-off publication should be notified to insure KIAC is substituted for TUSC.

Sincerely yours,

LH/sw

NASA

National Aeronautics and
Space Administration

Washington, D C
20546

MAR 2 1978

Reply to Attn of

FEB 2 1978

Policy Statement
KIAC
AND
SALES
TERRITORY.

MEMORANDUM

TO: Distribution

FROM: ET-6/Chief, Industrial Applications Division
Technology Utilization Office

SUBJECT: Change in Status of TUSC and Regional Realignment

Effective immediately the Technology Use Studies Center (TUSC) at Southeastern Oklahoma State University is renamed the KERR Industrial Applications Center (KIAC). On July 1, 1978 KIAC will transition from sponsored to fee services.

Initially, KIAC's region of responsibility will include the entire state of Oklahoma and the northeastern counties of Texas which encompass the Dallas/Fort Worth metropolitan area. Effective July 1, 1978 the responsibility for Arizona will be transfered from WESRAC to TAC.

R. M. Voris

DAVID HUBLER
954 HOMESTEAD ST.
BALTO, MD. 21218
FEB. 10, 1978

TO WHOM IT MAY CONCERN;

I JUST RECEIVED THE FEBRUARY ISSUE OF NATION'S BUSINESS AND READ ALL THE ARTICLES ON THE SPACE PROGRAMS. THEY WERE VERY INTERESTING AND STARTED MY MIND INTO WONDERING HOW I COULD GET INVOLVED.

AS A JUNIOR AT TOWSON STATE UNIVERSITY, TOWSON, MARYLAND, IN PHYSICAL EDUCATION, I WOULD LIKE TO KNOW WHAT CONTRIBUTIONS, IF ANY, THE SPACE PROGRAMS HAVE MADE IN THE FIELD OF KINESIOLOGY AND GYMNASTICS? DO ASTRONAUTS HAVE A SPECIAL EXERCISE PROGRAM AND HOW MIGHT THIS HELP ME AS A PHYSICAL EDUCATION INSTRUCTOR?

I ALSO WORK PART-TIME AS A HEALTH INSTRUCTOR AT THE LEISURE HEALTH CLUB, CHARTLEY SHOPPING CENTER, REISTERSTOWN, MARYLAND. I WOULD APPRECIATE ANY INFORMATION YOU COULD MAKE AVAILABLE TO ME CONCERNING DIETS THAT HAVE RESULTED FROM THE NUTRITIONAL RESEARCH IN THE SPACE PROGRAMS AND COULD BE APPLIED, OR I SHOULD SAY UTILIZED, BY ORDINARY PEOPLE IN THEIR DIETS.

ALSO, HOW CAN I BECOME INVOLVED IN THE SPACE PROGRAMS? ARE VOLUNTEERS STILL NEEDED FOR ANY FUTURE SPACE SHUTTLES OR RESEARCH STUDIES?

THANK YOU SO MUCH FOR ANY INFORMATION THAT YOU CAN SEND TO ME REGARDING THE REQUESTED INFORMATION.

SINCERELY YOURS,
David Hubler

TECHNOLOGY USE STUDIES CENTER

February 16, 1978

Mr. John T. Wheeler
Technology Utilization Officer
Lyndon Johnson Space Center
Houston, TX 77058

Dear Jack:

For your information (and possible assistance), I am enclosing another inquiry that resulted from the article in the February issue of Nation's Business (a reproduced copy of it is also enclosed).

You no doubt have access to printed reports on the astronaut physical training program that you might be able to share with Mr. Hubler. We can duplicate and send him the applicable report abstracts. Also, we can check our microfiche file for reports and offer a loan of them to him, but most of the time people respond by saying that they do not have access to a microfiche reader. If you can locate relevant material, would you please forward it to Mr. Hubler and send us a copy of your forwarding letter.

I received a call from Jack Grinovich after you talked to him; he is well pleased with the information you provided. We are sending him a copy of the latest Tech Brief issue and will add his name to our mailing list. Thank you again for your assistance.

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw

cc: Mr. David Hubler

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

memo

FROM THE DESK OF
Jack Grinovich

To Bill Dodd Date 2/1/78

Subject Magazine article we talked about

Bill, thanks for your time, I appreciate it.

I suppose I have interest in any type of unit that would have application to public usage with special emphasis on preventive health ie blood pressure checking The G.E unit on this page physical taker.

I suppose my problem is I'm not really sure what I'm looking for I will get down to Dreant soon to look thru your index (medical)

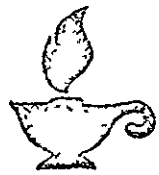
Thanks again

Jack Grinovich

office phone (405) 525-5544 xt 1881

Hm 787-5757

TECHNOLOGY USE STUDIES CENTER



February 15, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

Mr. Jack Grinovich
Box 1016
Bethany, OK 73008

Dear Jack:

I received your note with the duplicated article from Nation's Business. Your interest in the Technology Use Studies Center (TUSC) is appreciated very much.

As you are well aware, we and many other communities are "snow bound," but when the weather lets up, we would be pleased for you to visit with us to review the various NASA documents, Aerospace Medical and Biological Index, etc.

Enclosed for your information is a more detailed explanation of the NASA network established to help facilitate the technology transfer process.

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosure

P.S. Enclosed is the most recent issue of Tech Brief. We will be pleased to add your name to our mailing list. Also let us hear from you concerning your success in locating the firm that you inquired about.

FEB 21 1978

Dear Sir,

Please sent me information and pictures of astronauts and their mission. Please sent it as fast as you can

Thank You!

Sent to → Peter Li
1125 E. 13
Brooklyn N
112

KERR INDUSTRIAL APPLICATION CENTER
(Formerly Technology Use Studies Center)

February 24, 1978

Mr. Peter Li
1125 East 13th Street
Brooklyn, NY 11230

Dear Mr. Li:

Thank you for your recent request for information about NASA's astronaut program and space exploration. We hope the enclosed information will answer your need.

You may want copies of the two reports of which portions have been duplicated. You can obtain copies of these reports as noted.

The organizational title of the Technology Use Studies Center (TUSC) was recently changed to the Kerr Industrial Applications Center (KIAC). The late Oklahoma Senator Robert S. Kerr was instrumental in the drafting and passage of the Space Act of 1958; therefore, it is a belated recognition of Senator Kerr to aerospace exploration.

Please feel free to contact us in the future should you have need for additional information.

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

MAR 3 1978

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE SYSTEMS COMMAND
ANDREWS AIR FORCE BASE, DC 20334

13 FEB 1978

Southeastern State College
Technology Use Studies Center
Durant OK 74701

Sir

The Air Force Systems Command Deputy for Procurement and Manufacturing is establishing a business strategy plans and analysis activity. We will be attempting to look at the broad world in which defense systems acquisition takes place in terms of the aerospace industry and what motivates it. We want to investigate long-term trends in such areas as economics, social forces, technology change and general business indicators. Hopefully the results of our analyses will help our military decision makers in their planning for the acquisition of major systems.

We would very much appreciate hearing from you about any studies or information you may have (or of which you are aware) which might help us build our picture of the defense systems acquisition environment and the forces which we need to address to make our business strategy more effective. In turn, we would be pleased to assist you in your study efforts, to the extent possible.

We are enclosing mailing labels for your convenience. We would appreciate being placed on your list for continuing information. Our project leader is Mr. Timothy Crawford, HQ AFSC/PMX, Andrews AFB 20334 (area code 301-981-2962). Thank you for your help.

Sincerely

RONALD W. TERRY, Col, USAF
Chief, Plans & Management Office
DCS/Procurement & Manufacturing

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 13, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Mr. Timothy Crawford
HQ AFSC/PMX
Andrews AFB, DC 20334

Dear Mr. Crawford:

We are responding to Colonel Terry's letter of February 13 wherein you have requested information or studies pertinent to defense systems acquisition.

It would be of interest to us to know how we were included in your mailing list. Your request goes far beyond the function of this Center. The Technology Use Studies Center was established in 1964, under the auspices of NASA, to study the way and means to increase the utilization of space developed technology in a typical nonurban area.

In a step to more clearly communicate the activity of the Center, the organizational title was recently changed to Kerr Industrial Applications Center. NASA sponsors seven such Regional Industrial Applications Centers as part of a technical information dissemination network. The purpose of this part of NASA's activities is to fulfill a requirement of the Space Act of 1958; i.e., "provide for the widest practicable and appropriate dissemination of information concerning its (NASA) activities and the results thereof."

In short, it is an effort to move or transfer NASA technology to the public sector for the benefit of the tax payers.

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw

KERR INDUSTRIAL APPLICATION CENTER

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

February 27, 1978

Mr. Scott Eubanks, Director
Department of Industrial Development
500 Will Rogers Building
Oklahoma City, Oklahoma 73105

Dear Scott:

The National Aeronautics and Space Administration recently agreed to expand the Kerr Industrial Application Center (KIAC), formerly the Technology Use Studies Center (TUSC), located at Southeastern Oklahoma State University, Durant, Oklahoma. This expansion will result in the ready availability of technical assistance to individuals, firms, and/or agencies throughout the State of Oklahoma. From 1964 through 1977, the Center's service area in Oklahoma included only 19 southeastern counties. In 1978, KIAC will begin a two-year transition to a regional industrial applications center. Information about the NASA Technology Transfer network is enclosed. The duplicated information appears in the NASA Annual Reports.

Increased funding by NASA will provide for additional personnel who are essential to the task of being a ready source of technical expertise which exists within the vast network of NASA's facilities. KIAC is a vital link in the transfer of space technology to the public sector and especially for the economic development of Oklahoma. The resources of NASA; i.e., scientists, engineers, and researchers at the NASA Field Centers help to solve problems at the local level through KIAC.

A commitment of NASA funds to enlarge the scope of work will require the State to share in the commitment by obligating funds of an equal amount. Specifically NASA's increased funding for KIAC requires a $50,000 match by Oklahoma. Projected 1978 NASA funding for the Center is $125,000, an increase of $50,000. Based on benefits derived from the NASA Technology Utilization program nationwide, the average rate of return is $6 for each $1 invested relative to industrial development.

Through the joint efforts of ID and KIAC, economic development in the State should be greatly enhanced.

Sincerely,

C. Henry Gold
Director

CHG/sgw
Enclosure

PELTON/BLUM, INC. CONSULTANTS IN ACOUSTICS

February 23, 1978

Technical Use Study Center
Southeastern State University
Durant, Oklahoma 74701

Gentlemen:

Please send me information regarding the use of your NASA Technical Center and how we may make use of the Databank for our particular acoustical consulting firm.

Very truly yours,

Howard K. Pelton

Howard K. Pelton

nl

1015 ELM STREET DALLAS, TEXAS 75202 214 741-7701

KERR INDUSTRIAL APPLICATION CENTER
(Formerly Technology Use Studies Center)

March 1, 1978

Mr. Howard K. Pelton
Pelton/Blum, Inc.
1015 Elm Street
Dallas, Texas 75202

Dear Mr. Pelton:

Thank you for your recent inquiry concerning our Center. It will interest you to know that the organizational title of the Technology Use Studies Center (TUSC) was recently changed to the Kerr Industrial Application Center (KIAC). It is a belated recognition of the late Oklahoma Senator Robert S. Kerr, who was instrumental in the drafting and passage of the Space Act of 1958.

I have enclosed information that explains the network of facilities for the transfer of technology by NASA. KIAC (formerly TUSC) is a part of this network.

We would be pleased to provide you with any information that would be of benefit to your firm. We routinely make literature searches (manually and by computer) in various areas of technology, and we occasionally contact directly a researcher at one of the NASA Field Centers on behalf of a particular request. If there is a cost involved, it is usually the recovery of expenses that we incur, such as ordering publications, reports, etc. Please feel free to contact us at any time stating specific requests you may have.

Sincerely,

C. Henry Gold

C. Henry Gold
Director

CHG/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Geo. C. Christopher & Son, Inc.

STRUCTURAL STEEL FABRICATION • STEEL SERVICE CENTER
REINFORCING STEEL • WELDED WIRE FABRIC • BUILDING PRODUCTS
(316) 267-6351 • BOX 607 • WICHITA, KANSAS, 67201

February 27, 1978

Technology Use Studies Center
Southeastern State University
Durant, Oklahoma 74701

Gentlemen:

We read in the February "Nation's Business" of the NASA Assisted Computer Center's maintaining files on space age technological development. Your center is the closest to our office and we are interested in developing discourse in an effort to determine the state of some electronic development that could lead to an improvement in metallurgic processing technology.

We would be grateful for any information you could give us concerning method of becoming involved with your center-- What kind of questions should we ask? What sort of answers should we expect? Fee structures? and so forth.

Please reply to this writer direct.

Very truly yours,

GEO. C. CHRISTOPHER & SON, INC.

George C. Christopher, II
Executive Vice President

GCC II/ao

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 3, 1978

Mr. George C. Christopher, II
Executive Vice President
Geo. C. Christopher & Son, Inc.
Box 607
Wichita, Kansas 67201

Dear Mr. Christopher:

Thank you for your recent inquiry. The scope of operations and geographical area of responsibility are being enlarged by NASA for this Center during 1978 and the following two years. From 1964 through 1977 the Kerr Industrial Application Center (KIAC), formerly the Technology Use Studies Center (TUSC), provided services to a relatively small area in southeastern Oklahoma and northeast Texas. It has been an experiment aimed at studying the way and means to increase the utilization of technology in a typical non-urban area.

The Center however is now transitioning into a Regional Industrial Applications Center which means that the full services of the NASA technology transfer network is available to your company through KIAC. Information about the NASA facilities involved in the Technology Utilization program is enclosed for your information.

Because space "vehicles" are subject to extremely high stresses, temperatures, etc., NASA researchers are probably more advanced in the technology of metallurgic processing than most of the metal processing firms in the country. A large number of firms have been involved as contractors to NASA on various projects. However, such contracts provide that newly developed data or information belongs to NASA---contracts people refer to this as the "government rights to data" clause.

The NASA Industrial Applications Centers mentioned in the article in "Nation's Business" can access the NASA computer for information relative to the state-of-the-art and it is our job to make a special effort to help apply a given space developed technology to the public sector.

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

As for the type questions to ask, you merely indicate the problem and inquire if information is available relative thereto. We have several resources including the scientists and researchers at the NASA Field Center(s) who may be involved in work relating to the problem. The more we know about the problem--especially the who, what, why--the better answer we can provide as to the how, when, or where. The fee structure is based on cost recovery, and we will not commit you to an expense without your approval.

Please let us hear from you again if we can be of service to you.

Sincerely,

C. Henry Gold
Director

CHG/sgw

P.S. For your general information, I have also enclosed applicable pages from the 1977 Scientific and Technical Aerospace Reports (STAR) index as an example of various NASA research projects involving metals, metallurgy, steels, etc.

Southeastern Oklahoma State University
DURANT, OKLAHOMA

LEON HIBBS
PRESIDENT

March 8, 1978

Messrs. Bob, Breene, and Bill Kerr
Kerr Foundation - Fidelity Plaza
201 Roberts Kerr Avenue
Oklahoma City, OK 73102

Dear Bob, Breene, and Bill:

It is our pleasure to inform you that the organization title of the Technology Use Studies Center (TUSC) has been changed to the Kerr Industrial Applications Center (KIAC) in honor of your father's efforts and the role he played in initiating our Nation's Space program. You will notice in the enclosed memorandum that this information has been publicized throughout NASA's network for technology utilization.

Congressman Wes Watkins is vitally involved in the transition. As a result of his efforts, additional NASA funding for KIAC is being approved. In addition, he, State Senator Roy Boatner, and State Representative Guy Davis have been instrumental in obtaining state matching funds for KIAC through the State Department of Industrial Development.

The plans for a nonprofit R&D corporation are proceeding through the joint efforts of private foundations, KIAC, and Congressman Watkins' office. The base for industrial development in Oklahoma and particularly southeastern Oklahoma should be greatly expanded.

It is our goal that KIAC will prove to be worthy of your father's good name.

Sincerely,

LH/sw

JOHN E. REID AND ASSOCIATES est. 1947
Polygraph Examiners
215 NORTH DEARBORN STREET · CHICAGO, ILLINOIS 60601 · (312) 782-2100

JOSEPH P. BUCKLEY
DIRECTOR

JOHN E. REID
PRESIDENT
HARRY C REED
DEAN, REID COLLEGE
PHILIP ASH, Ph D
DIRECTOR OF RESEARCH
DANIEL J REID
REID REPORT/SURVEY

March 3, 1978

Technology Use Studies Center
Southeastern State University
Durant, Oklahoma 74701

Dear Sir:

In the February, 1978 edition of Nation's Business there was an article describing the industrial applications of scientific equipment developed by the various centers operated by the National Aeronautics and Space Administration.

I would be most interested in any information you could provide regarding the instrumentation research done in the area of medicine. Since the Polygraph Instrument records respiration, blood pressure and the galvanic skin reflex response there may be some valuable application of your research to the field of Polygraph.

I would be most appreciative of any information or literature you could provide us in this area.

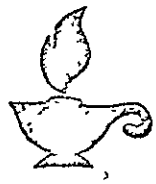
Sincerely,

Joseph P. Buckley

JPB:mj

CHICAGO MILWAUKEE DENVER

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)



March 13, 1978

Mr. Joseph P. Buckley, Director
John E. Reid and Associates
215 North Dearborn Street
Chicago, Illinois 60601

Dear Mr. Buckley:

The article in "Nation's Business" did not include information about the complete network of NASA facilities available and used in the process of technology transfer.

Your request has been forwarded to the Advisory Center for Medical Technology and Systems located at the University of Wisconsin. That Center is a part of the NASA Biomedical Application Team and is located in Milwaukee. Your associates in the office there should be able to develop worthwhile dialog with Dr. Norman E. Houston, Director of the Center.

It would be pure speculation on our part to attempt to show the applicability of NASA's highly sophisticated human monitoring systems toward improvements in polygraph systems.

Sincerely,

C. Henry Gold

C. Henry Gold
Director

CHG/sgw

cc: Advisory Center for
Medical Technology & Systems

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

33703 33rd Pl. S.W.
Federal Way, Wa. 98003
March 1, 1978

Technology Use Studies Center
C. Henry Gold, Ph.D., Director
Southeastern State University
Durant, Oklahoma 74701

Dear Sir:

I am doing research for a book on the benefits that have come about as a result of our Space Program. I'm looking for items especially developed for, or were improved upon for space, and their uses in other areas since then.

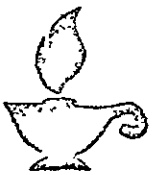
I would appreciate very much any information that you can give me in this area. Also names of other organizations where I might be able to obtain additional information. Thank you very much.

Sincerely,

Elizabeth Abdullah

Elizabeth Abdullah

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)



March 13, 1978

Ms. Elizabeth Abdullah
33703 33nd Place, SW
Federal Way, WA 98003

Dear Ms. Abdullah:

Thank you for your recent letter seeking information about benefits from the Space program.

The enclosed NASA publication, "Spinoff 1976" will provide you with numerous examples of benefits resulting from the Space program (note especially the information beginning on page 20).

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

FEB 28 1978

Southwest Regional Energy Council

Suite 507
3300 West Mockingbird Lane
Dallas, Texas 75235
214—358-1254

February 17, 1978

Dean C. Henry Gold
School of Business & Industry
Southeastern Oklahoma State University
Durant, Oklahoma 74701

Dear Dean Gold:

Today, as the country faces a critical energy crisis, energy conservation, energy production techniques, and the development of alternate energy resources are of vital importance. The states of Arkansas, Louisiana, New Mexico, Oklahoma and Texas play a key role in the energy development program of the nation, since they presently provide over 50 percent of total domestic energy production. The Southwest Regional Energy Council is an organization composed of the legislative leadership for energy matters from these five states. It provides a formal mechanism for sharing information on energy-related activities in its respective member states and serves as a forum for discussing and debating energy policies which effect the Southwest Region and the nation. The Council realizes the great potential of the region's institutions of higher education to find more and better ways to utilize our resources, both old and new. However, there exists no comprehensive source of information on what energy-related research has been conducted recently or is currently under way in our colleges and universities.

The Council has decided to conduct a symposium for those higher education institutions engaged in energy-related research. Accordingly, we would appreciate your cooperation and assistance in providing the Council with the appropriate information necessary to identify your areas of expertise.

A report of the symposium will provide State Legislators in the region with a quick refernce when making decisions regarding future allocation of funds for energy research.

Additionally, information received will be useful to appropriate state and federal agencies, as well as institutions of higher education, to serve as an aid to plan and coordinate energy related research activities.

Please complete the enclosed questionnaire to provide us with an understanding of your institution's energy-related program. The assistance you are able to give the Council in carrying out this inventory will be greatly appreciated by all concerned.

Sincerely,

Joe C. Hanna
Chairman
Southwest Regional Energy Council

JCH/mld
Enclosures

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 13, 1978

Mr. Joe C. Hanna, Chairman
Southwest Regional Energy Council
3300 West Mockingbird Lane - Suite 507
Dallas, Texas 75235

Dear Mr. Hanna:

We are pleased to respond to your letter of February 14 in which you requested information about the institution's energy-related program(s).

The University is not conducting energy-related research, as such, in the various areas as shown on the "Subject Code Sheet." However, the University is very much involved in the dissemination of information that concerns alternate sources of energy.

Through a contract relationship since 1964, the Kerr Industrial Applications Center (KIAC), formerly the Technology Use Studies Center (TUSC), has functioned as part of the NASA network established for the purpose of technology transfer. This activity is explained in the enclosed duplicated information.

KIAC has been serving the needs of small firms throughout Region VI for the past seven years through the Region's SBA Technical Assistance Officer. Beginning this year, the responsibilities of the Center have been enlarged. Ultimately, it is our goal to become NASA's Regional Industrial Applications Center in this area. We currently have been delegated geographic responsibility for Oklahoma and north Texas, including Dallas and Fort Worth.

In any case, a statement of work in our contract provides for "cooperation with other agencies"; therefore, we would be pleased to provide you with energy-related research information available through the accessible data banks. The cost of such services is based solely on cost recovery, and you would not be committed to an expense without your prior approval.

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Please feel free to contact us if you have need for further information.

Sincerely,

C. Henry Gold

C. Henry Gold
Director

CHG/sgw

MAR 3 1978

Box 1011
Bridgeport, Texas 76026
February 26, 1978

Tech Use Studies Center
Southeastern State University
Durant, Oklahoma 74701

Gentlemen:

Please send me any information involving energy research that you might have available. If there is any charge, please bill us. Thank you.

Yours truly,

Glenn S. Pike

Glenn S. Pike
World Energy Co.

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 13, 1978

Mr. Glenn S. Pike
World Energy Co.
Box 1011
Bridgeport, TX 76026

Dear Mr. Pike:

We are enclosing the index pages from only one information source on the subject of energy research. As you will note, the cited reports consider many aspects of energy research. This index should help you to narrow the particular area of interest that you have in mind relative to energy research.

After you have reviewed the index, we will attempt to answer your specific request.

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

BadgerMeter,Inc. Precision Products Division

6116 East 15th Street
Tulsa, Oklahoma 74115 (918) 836-8411

3/8/78

Mr. Auggie Moore,

I wish to obtain the following abstracts:

A77-26809 The impact of microprocessors on test system design and the engineer.

A77-24423 The employment of microcomputers in materials testing.

N77-11215 The optimal planning of computerized manufacturing systems.

N77-19807 State-of-the-art in improved parts programming for numerically controlled machines.

N77-15407 Microprogramable data acquisition and probe control system (MIDAS 4) with application to compressor testing.

N77-10304 Computer Systems: What the future holds.

The previous information you supplied me with appears to be of uttermost importance in expediting a microprocessor program at Badger Meter Inc. in Tulsa, Oklahoma. Only upon receival and evaluation of follow up documentation will I be able to estimate just how much this company will profit from the TUSC program, in relation to microprocessors. One thing is for sure and that being, you have aided in opening the eyes of Badger Meter Inc. to the many recent concepts to be employed thanks to the TUSC program. I appreciate your assistance in researching this problem for me. If I can be of any help to you in the future please feel free to give me a call.

Cordially,

Mike Newell

P.S. Give Bill Dodds and Don Carpenter my best wishes.

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 15, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Mr. Mike Newell
Manufacturing Engineer
Badger Meter, Inc.
6116 East 15th Street
Tulsa, OK 74112

Dear Mr. Newell:

Thank you for your letter. The reports you requested have been ordered. Four of them will come direct to you as indicated on the enclosed order form. The cost for these documents is $22.50.

Document A77-26809 has been ordered from AIAA (copy enclosed). We have requested the copy be sent to us, and we will then forward it on to you. We do not know the cost for this item. When checking the abstracts for ordering information, we noticed that A77-24423 (The employment of microcomputers in materials testing) is in German; therefore, we did not order this report.

The attached photocopied articles are from Electronics magazine. They are peripheral in nature but may be of interest to you.

Sincerely,

Bill Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures

Shannon Research Corporation

P O Box 236 • Lafayette, CA 94549 • (415) 376-2653 • A Division of Shannon Financial Corporation

March 8, 1978

Technology Use Studies Center
Southeastern State University
Durant, Okla. 74701

To Whom It May Concern:

I read an article in the February, 1978 issue of Nations Business in which your name and address were mentioned. I would like specific details about how Shannon Research Corporation might access your data base of information. Please send me any descriptive information you might have. My specific questions are as follows:

1. Is your data base accessible via telephone communications?
2. What is the cost of your service?
3. What training would be necessary to access information?
4. What is the general nature of your information?

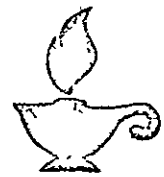
Please send any correspondence to the above address. Thank you for your assistance.

Sincerely,

Tom Watson

TW/db

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)



March 16, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Mr. Tom Watson
Shannon Research Corporation
P. O. Box 236
Lafayette, CA 94549

Dear Mr. Watson:

Thank you for your letter of March 8. We have had numerous inquiries as a result of the February issue of Nations Business.

Within the past month, we have learned that this Center will begin a two-year transition from a NASA-sponsored Industrial Applications Center (IAC) to a fee-charging IAC. The latter is the mode of operation by which the other six IACs have operated for the past 12-15 years. As a result of our new role, it has been deemed appropriate to change the organizational title of the Center, as noted in our letter heading. As a matter of background information, former Oklahoma Senator Bob Kerr was instrumental in the drafting and passage of the Space Act of 1958. The Kerr Industrial Applications Center (KIAC) is a belated recognition of Senator Kerr's early endeavors on behalf of the nation's aerospace program.

Reading between the lines of your letter, it is evident that you are familiar with and/or possess electronic data terminal equipment. We use a Texas Instrument "Silent 700" by which we access via telephone the NASA data bank (computer) as well as two commercial data bases that greatly expand our capability to access additional data files. Additionally, a high percentage of search service is accomplished manually since our library resource is rather extensive.

In answer to your specific questions:

1. We do not have a data base, per se, at our facility; as noted above, we access data bases via telephone.

2. The service is based on cost recovery. You will not be committed to an expense without your approval.

3. Not applicable to KIAC. A client communicates his questions or problem; i.e., the "what" and "why." KIAC attempts to respond with the "how," "who," and "where."

4. The general nature of information provided is initially in the form of report abstracts, either in computer printout form or reproductions of abstract journals in the KIAC library. After reading the abstracts, the client decides whether or not information retrieved is applicable and, if so, which reports. Most government reports are available through the National Technical Information Service (NTIS). Some clients prefer that KIAC obtain needed report(s) for them on a cost-recovery basis; other clients order directly from NTIS.

If you have need for additional information or if we can be of service to you, please feel free to contact us.

Sincerely,

William G. Dodd
Senior Industrial Specialist

WGD/sgw

KIAMICHI HALL

A Non Profit Community Service Corporation

P O. Box 91

ANTLERS, OKLAHOMA 74523
(405) 298-3570

March 13, 1978

Dr. C. Henry Gold
Dean, School of Business and Industry
Southeastern Oklahoma State University
Durant, Oklahoma 74701

Dear Henry:

Referring to the enclosed article, I would like to consider the nonprofit corporation mentioned in column four. We would be pleased to offer the services of Kiamichi Hall, Inc. to perform the functions of that corporation. Given that we are very much in the product development business, it seems a natural.

Warmest regards.

EEB/sg
encl.

Yours Sincerely,

Eugene E. Bernard
President

HUGO DAILY NEWS

Tuesday

Feb. 28, 1978

Published Monday Through Friday Afternoon by the Hugo Publishing Co., 128 E. Jackson, Hugo, OK! 74743 15¢ Vol. 77 No. 40

SOSU program could have impact on business and jobs in local area

DURANT--A program at Southeastern State University which adapts space technonogy to the needs of business and industry in being greatly expanded and could have a major economist impact on jobs and industry in southeastern Oklahoma, Congressman Wes Watkins and SESU President Leon Hibbs have announced.

Beginning July 1, the area served by the university's Technology Utilization Studies Center will be more than doubled and its scope will be broadened signifi-

TUSC is one of seven KERR Industrial Applications Center (KIAC) funded by the National Aeronautics and Space Administration to transfer technology developed for the nation's space program to the business and industry community. However, the Durant program has been limited to only a portion of the services performed by other IACs.

NASA has how agreed to expand the Durant IAC's service area to encompass the entire state of Oklahoma and portions of north Texas, including the Dallas-Fort Worth area. The staff will be employees during the first year, with more to be added as the program expands. Funding will be in increased from last year's $75,000 to an initial $125,000 and additional territory may be added to the services area in the future.

IACs work with private industry, particularly small businesses which lack funds for research and development, in developing new products and services from technology developed by NASA for the space program. Among the many products produced from this technology are jet airplanes coating for bridges and pipelines and shock-absorbing foam padding for football and other sports equipment.

Watkins said the Durant IAC can become a major impetus in developing homegrown industry and jobs for the Oklahoma area. He is working on a related project to establish a non-profit research and development corporation to develop product ideas which would be technologically refined by the IAC. The non-profit corporation would work with the IAC to prepare market surveys and, if feasibility is determined, pany in manufacturing the new product in the Oklahoma area.

Louis Magavero, director of NASA's Technology Utilization program, said his agency has made the commitment to provide all the technological and research services needed to elevate the Durant program to the size of other IACs. He will be working closely with Dr. Henry Gold, chairman of SESU's School of Business and Industry and director of TUSC, during the transition period.

Watkings, who serves on the House subcommittee which has oversight respon- sibility for NASA programs, has been working with Magavero, Dr. Hibbs and Dr. Gold on the Durant project for the past eight months.

I am very pleased to see this project become a reality Watkins said. "I am certain that it will have a very positive economic effect that will actively help each county in the 3rd Congressional district and the entire IAC service area.

"I am hopeful that we will be able to bring to the IAC some of the nation's most creative and visionary minds to make this program at Southeastern State on innovative model for the

C-2

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 17, 1978

Dr. Eugene E. Bernard, President
Kiamichi Hall
P. O. Box 91
Antlers, Oklahoma 74523

Dear Gene:

Thanks for your suggestion. However, plans are already underway for developing the nonprofit research and development corporation. Perhaps through the efforts of the R and D corporation and KIAC, we might be able to furnish assistance to Kiamichi Hall.

I will see that all involved are made aware of your interest.

Thanks again.

Sincerely,

Henry

C. Henry Gold
Director

CHG/sgw

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

OKLAHOMA WHEAT COMMISSION
3108 N W Expressway, No 102
Oklahoma City, Okla 73112
(405) 521-2796

DON DUDLEY
Executive Director

MAR 3 1978

March 2, 1978

Dr. C. Henry Gold
Director
Kerr Industry Applications Center
Southeast Oklahoma State University
Durant, Oklahoma 74701

Dear Dr. Gold:

Here is the information on the proposed wheat gluten washing plant for Oklahoma which I discussed with you by way of telephone a few days ago. Basically, we are interested in doing a feasibility on the opportunities for such a plant. Gluten is separated from the wheat kernal by a fractioning and washing process, and is used in a number of human foods, animal foods, vitamin preparations, veterinary supplies, and also has some industry applications.

The Oklahoma Wheat Commission would like to do a feasibility study on the opportunities for such a plant in the wheat producing region of our State, which is basically the western half. Since we are a state agency with limited funding, we are hoping to take advantage of any existing program that might be available to assist with the feasibility study.

Far-Mar-Co Grain Coop, headquartered in Hutchinson, Kansas has a plant currently in operation, and we are hoping to put together a busload of high-level officials and tour this facility on March 17. We will be leaving the Tradewinds Capitol at 6:45 A. M. If you care to attend, please call me COLLECT. The tour will be by invitation only.

Thank you very much, and we would appreciate any assistance that you can lend on this project.

Sincerely,

Don Dudley
Executive Director

DD:dh

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 22, 1978

Mr. Don Dudley, Executive Director
Oklahoma Wheat Commission
3108 N.W. Expressway, No. 102
Oklahoma City, Oklahoma 73112

Dear Mr. Dudley:

I appreciate your sharing the information about the proposed Oklahoma wheat gluten washing plant in your letter of March 2.

Through initiatives of Congressman Wes Watkins, this Center has started a two-year transition from a NASA-sponsored nonfee Industrial Applications Center (IAC) to a fee-charging IAC. More importantly though, the Center is being assigned the responsibility to serve a much larger geographical area. The enlarged area includes all of Oklahoma and north Texas.

In functioning as part of the NASA Technology Utilization program, this Center, like a state agency, also has limited funding available for use in making the type of feasibility study you have in mind. However, progress is being made in the formation of a nonprofit research and development corporation which would have the funds and the capability to make feasibility studies such as you describe.

At the present time, KIAC serves as a resource for technical information utilizing not only NASA literature references but the scientific and technical expertise located at the various NASA Field Centers. With regard to wheat, the type of information is more or less limited to the use of satellites for crop production and acreage estimates as indicated on the attached listing of 1976 indexed reports. Should any of the resources presently available to us prove of interest, please let us know. We would be pleased to do literature searches for you as you have need. Prior to July 1, 1978, there would, of course, be no charge.

Thanks for your interest.

Sincerely,

C. Henry Gold

C. Henry Gold
Director

CHG/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Technology Use Studies (TUSC)
Southeastern State University
Durant, Oklahoma
74701

****

To whomever might be in charge of Public Relations ;

I am a ninth grade student at Avondale Junior High School in Auburn Heights, Michigan.

Recently I obtained, from a magazine, some information about TECH (The Energy Conservation House) House and the possibilities of solar energy usuage in buildings to reduce the cost of utility bills. I was intrigued by the article. I felt, and still do, that this was a subject that should be expressed to more people.

Therefore, I decided to use TECH House as the basis for a research project and oral presentation for our Inquiry in American History class.

My specific description of the nature of my planned research project and oral presentation is that ; I'M going to explain as much as possible how TECH House works. I will also attempt to make a working model displaying its use of solar energy. Then I will talk about other plans for future houses and how they help to conserve energy. Finally, I will explain, as best as I can, how solar energy could fit into commercial use, and how economical solar energy is, compared to energy by coal or petroleum, or even nuclear or geothermal energy.

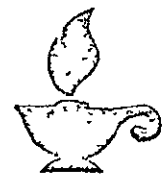
Any information that you could possibly send me concerning my research paper and oral presentation would be helpful.

Thank You Very Much !!!!!!

Scott E. Freeman
2561 Binghamton Dr.
Pontiac Twp., Michigan
48057

Scott Edward Freeman

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)



March 22, 1978

Mr. Scott E. Freeman
2561 Binghamton Drive
Pontiac, Michigan 48057

Dear Scott:

From our letterhead you will note that TUSC has recently acquired a new organizational title. However, it matters not whether we are called TUSC or KIAC--in either case, we are pleased to furnish you with information about the NASA Tech House and other information relating to the "home of tomorrow," solar energy, wind energy, underground homes, etc.

We commend you for taking interest in a subject that is critical to society as we know it. The availability of energy and economic use of it will certainly be a problem of major magnitude so long as we are dependent upon and continue to deplete fossil fuel at the current rate.

For additional information, we have enclosed an article that gives some background information about the nationwide NASA technology transfer network. The NASA Technology Utilization program exists for the purpose of promoting the beneficial use of new technology resulting from aerospace related research such as solar energy.

We extend our best wishes for success with your research paper and presentation.

Sincerely,

William G. Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

VISTRON CORPORATION

MIDLAND BUILDING, CLEVELAND, OHIO 44115

March 14, 1978

Technology Use Studies Center
Southeastern State University
Durant, Okla. 74701

Dear Sirs:

I read recently of the information that is available to industry from you. Can you tell me how to use your services. We are a manufacturer of industrial chemicals and agricultural chemicals, particularly fertilizers. We are very interested in possible products or technologies which might be applied to these areas. In addition, we are very interested in basic economics which could help us understand these areas better. What is the best way for us to work with you?

Yours very truly,

H. L. Wentz (RT)

H. L. Wentz, Manager
Market Research and
Development Services

HLW/pg

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

March 22, 1978

Mr. H. L. Wentz, Manager
Market Research and Development Services
Vistron Corporation
Midland Building
Cleveland, Ohio 44115

Dear Mr. Wentz:

The enclosed material will provide you with information about the various activities and facilities in the NASA technology transfer network. As indicated in the letterhead, this Center was recently renamed; however, we continue to function as a basic part of the NASA network as set forth on pages 115-116 of the enclosure.

All of the NASA Industrial Applications Centers (IACs) operate to serve their respective geographical areas with the common goal of applying the results of aerospace research and development when and where possible for the benefit of the public. Our designated geographical area of responsibility includes Oklahoma and north Texas. The IAC that serves your area is the Knowledge Availability Systems Center (KASC) located in Pittsburgh, Pennsylvania, and Dr. Ed Howie is the director.

The enclosed reproduced pages of the 1976 and 1977 NASA literature index will give you an example of the type information (and reports) on fertilizers that you might expect from a literature search. The IACs also have the capability to access not only the NASA data bank but several other commercial data files. I am sure that Dr. Howie and his staff will be able to assist you in finding applicable literature for your needs.

Thank you for your interest in NASA's Technology Utilization program.

Sincerely,

Bill Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures
cc: Dr. Ed Howie

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Collins Avionics Division
400 Collins Road NE
Cedar Rapids, Iowa 52406
(319) 395-1000
Cable COLINRAD Cedar Rapids

Rockwell
International

March 31, 1978

Technology Use Studies Center
Southeastern State University
Durant, OK 74701

Dear Sirs:

Upon reading Nasa's Huge Treasure Chest of Information, Nations Business, February 1978 issue, I became interested in finding out the types of information that you can provide. I would also appreciate information about your fee structure.

Yours truly,

Dan Laufenberg

Dan Laufenberg
Advanced Projects Engineer
Rockwell Avionics and Missiles Group
Collins Pro Line Manufacturing M/S 106-103

Gale
NASw-3007

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

April 5, 1978

Mr. Dan Laufenberg
Advanced Projects Engineer
Collins Pro Line Manufacturing M/S 106-103
Rockwell Avionics and Missiles Group
400 Collins Road, NE
Cedar Rapids, Iowa 52406

Dear Mr. Laufenberg:

Thank you for your recent inquiry. The scope of operations and geographical area of responsibility for this Center are being enlarged by NASA during 1978 and the following two years. From 1964 through 1977 the Kerr Industrial Applications Center (KIAC), formerly the Technology Use Studies Center (TUSC), provided services to a relatively small area in southeastern Oklahoma and northeast Texas. It has been an experiment aimed at studying the way and means to increase the utilization of technology in a typical nonurban area.

However, the Center is now transitioning into a Regional Industrial Applications Center which means that the full services of the NASA technology transfer network is available to your company through KIAC. Information about the NASA facilities involved in the Technology Utilization program is enclosed.

The NASA Industrial Applications Centers mentioned in the article in "Nation's Business" can access the NASA computer for information relative to the state-of-the-art and it is our job to make a special effort to help apply a given space developed technology to the public sector. The fee structure may vary from Center to Center, but it is primarily determined on the basis of cost recovery. We will not commit you to an expense without your approval.

Sincerely,

C. Henry Gold

C. Henry Gold
Director

CHG/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

TO DODD ACTION NEEDED? APR 3 1978
MAIL TO NACK?

הועדה לאנרגיה אטומית
ATOMIC ENERGY COMMISSION

NUCLEAR RESEARCH CENTRE-NEGEV
P. O. B. 9001, Tel. 057-75211, BEER-SHEVA 84190
ISRAEL

קריה למחקר גרעיני - נגב
ת"ד 9001, טל' 75211-057, באר-שבע 84190
ישראל

March 19, 1978

Dr. C.Henry Gold, Director
Oklahoma State University
Technology Use Studies Center
Southeastern State College
Durant, Oklahoma 74701
U.S.A.

Dear Sir,

I would appreciate to recieve information about your activities in technological applications.

I am considering orgenizing a symposium on technology transfer and would appreciate any information you could let me have on the subject.

Sincerely Yours,

A. Bar-Or

Dr. A. Bar-Or
Director of Met. Labs

834/D

File
NASW-3007

KERR INDUSTRIAL APPLICATIONS CENTER

April 19, 1978

ORIGINAL PAGE IS
OF POOR QUALITY

Mr. Roy M. "Butch" Voris, Chief
Industrial Applications Division (Code KT)
Technology Utilization Office
National Aeronautics & Space Administration
Washington, D.C. 20546

Dear Butch:

The enclosed letter requesting information about technology transfer is forwarded for action by Headquarters NASA since it is a foreign country request. This is in compliance with NASA's standard policy regarding such requests.

Sincerely,

Henry

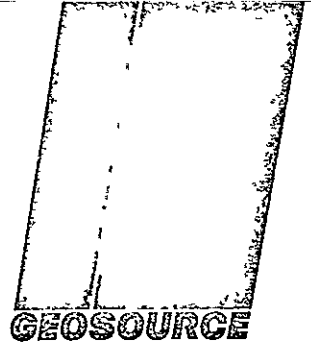
C. Henry Gold
Director

CHG/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

Oil Tool Division
Geosource Inc.

155 McCarty Drive
P O Box 9489
Houston, Tx 77011
(713) 676-1111 Telex 775409



APR 3 197

MAR 21 19

To Bill Todd
Action Needed

March 14, 1978

Knowledge Availability Systems Center
University of Pittsburgh
Pittsburgh, PA 15260

Dear Sirs,

The February issue of Instrumentation Technology carried an article regarding your technical library services. We are interested in the services offered by your industrial applications centers.

We have interest in technology such as an engineering index and particularly, in the energy-related subjects regarding engineering and research for drilling operations land and offshore.

Please forward your capabilities to:

J. D. Elrod
Manager, Research & Development
Geosource/Oil Tool Division
P. O. Box 9489
Houston, TX 77011

Very truly yours,

OIL TOOL DIVISION
GEOSOURCE INC.

J. D. Elrod

J. D. Elrod
Manager, Research &
Development

JE:ms

Hang in there
Good luck to the KIAC
from the WIAC at ICAIC

File
NASW-3007

KERR INDUSTRIAL APPLICATIONS CENTER

April 20, 1978

Mr. J. D. Elrod, Manager
Research & Development
Geosource/Oil Tool Division
P. O. Box 9489
Houston, TX 77011

Dear Mr. Elrod:

Your request of March 14, 1978, to the Knowledge Availability Systems Center concerning energy-related technology, land and offshore drilling research, etc., was forwarded to us for reply.

As background information, we are enclosing information about the entire NASA network that is available and used primarily for the purpose of technology transfer. But the "bottom line" is application of new technology.

You are no doubt aware that drilling and other oil well operations and the "how to" information are proprietary in nature. The NASA data bank contains limited reference material, but most information available to us is via commercial data files such as COMPENDEX (Engineering Index), ISMEC (Information Service in Mechanical Engineering), TUSLA (petroleum abstracts).

We access data files by use of an electronic data terminal. The terminal has a telephone coupler; thus, a long-distance telephone call connects us to the data base to be searched. Fee for the service provided is based on cost recovery.

Please contact us if you have need for more information about NASA's TU program, or if you want us to conduct a search for you.

Sincerely,

Bill Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

MEILINK

APR 10 1978

April 6, 1978

TECHNOLOGY USE STUDIES CENTER
Southeastern State University
Durant, Oklahoma 74701

Gentlemen:

I have read in the February, 1978 issue of Nation's Business that you are one of the centers established by NASA for the dissemination of information which NASA has developed over the years.

Our company manufactures various models and sizes of fire resistive insulated files and safes. We would like to inquire as to the availability of information relative to such things as fire and heat resistive materials such as paint or other coatings, insulation, foam products, heat shields, etc., although we suspect that many of the materials used for NASA's purposes may be more exotic and therefore more expensive than we might find a practical application for. We, nevertheless, are interested in scientific research and developments that apply to this area.

Please send us catalogs or indices of publications which might be available in this area and advise us of the cost and procedures to obtain whatever articles might be of interest to us.

Thanking you in advance for your prompt reply.

Sincerely yours,

MEILINK INDUSTRIES, INC.

James J. Akers,
President

JJA:gh

File
NASW-3007

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

April 20, 1978

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

Mr. James J. Akers, President
Meilink Safe Company
Box 2458
Whitehouse, Ohio 43571

Dear Mr. Akers:

Thank you for your recent inquiry as a follow-up to the article in Nation's Business. We have had numerous other questions that stem from the article.

We are enclosing additional information about the established NASA network available for promoting and assisting the technology transfer process. The ultimate goal of the NASA TU Program is to help in the practical application of new technology.

Index pages reproduced from one of the NASA reports are also enclosed to provide you with a sample of the sort of information you could expect from the NASA data bank. We routinely access other data files available through commercial sources by use of an electronic data terminal.

The cost or fee for the information services is based on cost recovery and we would not commit you to an expense without your approval. Most government reports are available through the Government Printing Office or the National Technical Information Service. Documents are usually priced relative to the number of pages and most documents are available in microfiches at very reasonable prices; i.e., one microfiche contains from 60 to 90 pages of information and the cost of one microfiche is usually less than $3.00.

The procedure is to write or call in your specific question and we will respond with report titles and usually abstracts of pertinent reports

for you to identify (this phase we call "looking in the barrel"). If we succeed in retrieving information that you believe to be pertinent and/or helpful, we will contact you as to the cost and obtain your approval to proceed on the basis of an agreed cost.

We hope this will answer your questions and we look forward to hearing from you in the near future.

Sincerely,

Bill Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures

PROFESSOR E.O. OKWUCHUKU,
OGUME GRAMMER SCHOOL,
P. O. BOX 43, OGUME
VIA KWALE, BENDEL
STATE, NIGERIA.

12TH APRIL 1979.

HNOLOGY USE
DIES CENTER (TUSC)
THEASTERN STATE
IVERSITY DURANT,
KLAHOMA 74701.

Dear Gold,

I have the Confidence that this letter will meet you in good Condition as regard health.

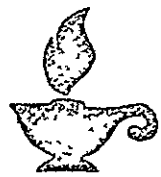
My Purpose of writting you this letter, was to Please Send us Some useful books for Studies on Technology.
Please kindly help us for my School is just a short of books on Technology.

Thank you for Co-operation.

Yours Sincerely,

file
NASW-2007

KERR INDUSTRIAL APPLICATIONS CENTER



May 3, 1978

Mr. Roy M. "Butch" Voris, Chief
Industrial Applications Division (Code KT)
Technology Utilization Office
National Aeronautics & Space Administration
Washington, D.C. 20546

Dear Butch:

The enclosed letter requesting information about technology books is forwarded for action by Headquarters NASA since it is a foreign country request. This is in compliance with NASA's standard policy regarding such requests.

Sincerely,

C. Henry Gold

CHG/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

University of Maryland — College of Engineering
TECHNOLOGICAL EXTENSION SERVICE
% Frostburg State College
Frostburg, Maryland 21532 ● (301)-689-2570
Office of Director

APR 24 1978

April 21, 1978

Dr. C. Henry Gold, Director
Technology Use Studies Center
Southeastern State University
Durant, Oklahoma 74701

Dear Dr. Gold:

We are a newly formed organization whose function is to provide technological assistance per the attached memo. In the cause of our activities, we will be searching for solutions to problems associated with technology. Would you please furnish this office with your areas of expertise and any costs associated with your services? Thank you.

Sincerely,

Frank F. Moderacki

Frank F. Moderacki
Director

/bj

Enclosure

University of Maryland — College of Engineering

TECHNOLOGICAL EXTENSION SERVICE
% Frostburg State College
Frostburg, Maryland 21532 ☎ (301) 689 2570

Office of Director

Technological obsolescence is one of the factors that contributes to the failure of small business. According to statistics released by the U.S. Department of Commerce, business failures occur in Maryland at a rate about 50 percent greater than for the country as a whole. While official figures are not available for Appalachian Maryland, it is likely that the rate is much higher here than elsewhere in the State. Dun & Bradstreet reports that only five states had higher failure rates than Maryland in 1974.

Business leaders predict that nine years from now, the majority of people working in industry will be producing items not yet developed. Consequently, to combat the adverse effects of obsolescence, there is a critical need to successfully transfer technology to those in need of it. Therefore, in order to strengthen the small business/industry community of the tri-county area of Western Maryland, a Technological Extension Service has been established by the University of Maryland, College of Engineering. This educational service function will be conducted from the campus of Frostburg State College with the following basic services available.

a) Assist business and industry in identifying their needs that can be met through technology, and train employees or employers to identify and analyze their technological needs.

b) Provide alternative solutions to technological needs from which the client can select alternatives of his choosing. Research may be involved.

c) Conduct workshops, seminars, and meetings on technological information to meet current and future needs.

This program of service will be provided upon request, at no cost to the client, and is available to existing or prospective small business or industry enterprises in Western Maryland. For further details regarding this program, please contact:

Frank F. Moderacki
Director

File

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OF POOR QUALITY

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

May 8, 1978

Mr. Frank F. Moderacki
Technological Extension Service
Frostburg State College
Frostburg, MD 21532

Dear Mr. Moderacki:

As indicated in our letterhead, you will note that we have a new organizational title. In functioning as a NASA Industrial Applications Center, we are a small part of the total NASA technology transfer network. This network is explained further in the attached material.

Your closest access to NASA technology would appear to be through the Technology Utilization Office at the Goddard Space Flight Center. Most services are provided on a cost-recovery basis.

It appears that your service is a close parallel to that of the land-grant colleges' extension services in agricultural and/or home economics provided through the county extension office (county agent).

Certainly, the county agent concept has been successful in agricultural matters; therefore, it should be an effective avenue by which technology transfer can be accomplished.

Please feel free to contact us if you have need for additional information.

Sincerely,

C. Henry Gold

C. Henry Gold
Director

CHG/sgw
Enclosure

BadgerMeter,Inc. Precision Products Division

6116 East 15th Street
Tulsa, Oklahoma 74115 (918) 836-8411

5/3/78

N 77 10325
N 77 10345

Bill,

Please accept my apology for not returning this material sooner. Our Design Engineers got their hands on the information and did not want to let go. Therefore, I would like to placé an additional order with the TUSC program. I require additional informational from Volumes 3 and 4 of "Advances in Engineering Science":

Aeroacoustics 1	Volume 3
Aeroacoustics 2	Volume 3
Wave Propagation	Volume 3
Atmospheric Sound Propagation	Volume 3
Inviscid Flow 1	Volume 4
Inviscid Flow 2 ——	Volume 4
Viscous Flow 1	Volume 4
Viscous Flow 2	Volume 4

I have copied all information required from Volume 2. My thanks once again for your assistance in this matter.

Cordially,

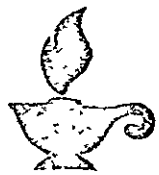
Mike Newell

Mike Newell, Manufacturing Engineer

BadgerMeter,Inc. Precision Products Division
6116 East 15th Street
Tulsa, Oklahoma 74112 (918) 836-8411

file
NASW-3007

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)



May 8, 1978

Mr. Mike Newell
Manufacturing Engineer
Badger Meter, Inc.
6116 East 15th Street
Tulsa, OK 74112

Dear Mike:

We received your letter last week, but we have not been successful in relating the volumes 3 and 4 information requirements (as shown in your letter) with the report titles. Therefore, we are enclosing the abstracts of the various reports included in volumes 3 and 4; please identify which reports you would like to order.

If you have access to a microfiche reader (and printer), you may want to consider ordering both volumes on microfiche. The price for both is $6.00 total. Eight reports (paper copy) may be as much as $40.00, or more.

We'll be awaiting your response.

Sincerely,

Bill

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

BOARD OF EDUCATION OF THE CITY OF NEW YORK, N. Y.

Please send me any pamphlets and posters you have available. If you could please send me 40 copies of each for my class. Thank you.

Mrs Hackney

25 2070(77-9005)3800 Pkg 6-69 373 1/2

Mailed copies of "Search before Research" 5/8/78

ORIGINAL PAGE IS
OF POOR QUALITY

MAY 8 1978

Santiago 2, Mayo 1978

Señor:

C Henry Gold, Ph D, director
Technology Use Studies Center (TUSC)
Southeastern State University
Durant, Oklahoma 74701

Señor:

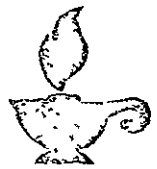
Le escribo esta, con el fin de conocer las actividades que allí se realizan ya que siento un profundo interes por la Astronautica y tambien las actividades que de ella derivan [illegible] que Ud. contacta a la NASA para que [illegible] un alumno. [illegible] material de información [illegible] que se interesa por esta [illegible] significa como [illegible] conocimientos sobre Astronomia, Astronautica, [illegible]nautica, Exobiologia, Fisica Nuclear, etc. [illegible] que yo recurro a Ud, con el fin de complementar mis conocimientos

Le saluda afectuosamente

René [illegible] B
Villa Los Presidentes
Block 12 5 A depto 301
Ñuñoa Santiago Chile

Jule
NASW 3007

KERR INDUSTRIAL APPLICATIONS CENTER



May 9, 1978

Mr. Roy M. "Butch" Voris, Chief
Industrial Applications Division (Code KT)
Technology Utilization Office
National Aeronautics & Space Administration
Washington, D.C. 20546

Dear Mr. Voris:

The enclosed letter requesting information about astronautics, astronomy, biology, and nuclear physics is forwarded for action by NASA Headquarters since it is a foreign country request. It is my understanding this is in compliance with NASA's standard policy regarding such requests.

Sincerely,

Robert E. Oliver

Robert E. Oliver
Director

REO/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

File
NASW-3007

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

May 22, 1978

Mr. David Hubler
954 Homestead Street
Baltimore, MD 21218

Dear David:

This is the latest copy of the NASA Spinoff, and you will note that it includes information relevant to your earlier request about special NASA exercise programs. We hope that it will be of benefit in your work as a health instructor.

Sincerely,

William G. Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

File
NASW-300

KERR INDUSTRIAL APPLICATIONS CENTER

May 31, 1978

Mr. D. C. Gann
Engineering Associates
2325 West 7 Place
Stillwater, OK 74074

Dear Mr. Gann:

With reference to your interest in the application of solar energy, we are enclosing additional information about the Tech House which was built at the Langley Research Center.

I hope this additional information will be beneficial to you and your continuing interest in conserving energy.

Do not hesitate to call upon us at any time you feel we can be of service.

Sincerely,

Robert E. Oliver
Director

REO/sgw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-

Tricom, inc. Bringing People Together Through Communications
572 Elm Street South Dartmouth Mass 02748 (617) 999-6097

May 25, 1978

Technology Use Studies Center (TUSC)
Southeastern State University
Durant, OK 74701

ATTN: C. Henry Gold, Ph.D., Director

Dear Dr. Gold:

Recent polls indicate increasing public interest in science, yet many individuals are "turned off" by science because they don't understand how it works or how its results affect us.

On October 19, a national memorial to Robert H. Goddard will be dedicated at Clark University in Worcester, Massachusetts. Current plans include an exhibit of the benefits of science and space technology - a small scale "hands on" exhibit where the general public can see, hear, and touch the results of technology which is evident in our everyday lives.

Do you have small scale exhibits of this type available in October? If so, what costs are involved in transporting and displaying the exhibit in Worcester? And finally, how long or short a duration can your exhibit be utilized?

Unfortunately, our time is extremely limited. I would appreciate your immediate response, by letter or telephone, to the above questions and thank you for your cooperation. Please feel free to contact me at (617) 999-6097 for further information.

Sincerely,

Shelley M. Lauzon cla

Shelley M. Lauzon

SML/cla

File
NASw-300

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

June 1, 1978

Mr. Shelley M. Lauzon
Tricom, Inc.
572 Elm Street
South Dartmouth, MA 02748

Dear Mr. Lauzon:

As noted above, TUSC is now the Kerr Industrial Applications Center (KIAC). We are pleased to respond to your letter of May 25.

This Center serves as a part of the NASA Technology Transfer network which is described in "Spinoff 78." However, the function of the various Industrial Applications Centers is to find the way and means to promote and expand technology utilization by dissemination of state-of-the-art information and/or otherwise stimulating centers of influence for technology utilization.

The NASA Field Centers such as Goddard, Langley, Lewis, etc. (as you probably are well aware) have the type of exhibits that provide examples of the benefits of science and space technology. NASA also documents the useful application of aerospace technology by the public sector. The 1978 publication "Space Benefits" is being sent to you via third class mail.

Thank you for your interest in KIAC.

Sincerely,

Robert E. Oliver

Robert E. Oliver
Director

REO/seg

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

Service rendered to client - Johns Manville

June 6, 1978

Commissioner of Patents
One Place Portage
Ottawa Hull, Quebec K1AOC9

Gentlemen:

We are interested in receiving a copy of the Canadian Patent No. PNCA1010886-Y22. Enclosed is a copy of purchase order 3027 and a check for $1.00 made payable to the Receiver General of Canada, as requested by your office.

Would you please send this information to:
Mr. Ron Marshall, Industrial Specialist
Kerr Industrial Applications Center
Southeastern Oklahoma State University
Station A, Box 2584
Durant, Oklahoma 74701

Thank you.

Sincerely,

Ron Marshall

Ron Marshall
Industrial Specialist

RM/sw
Enclosure

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

Andy Sorensen
RR2 Box 872
Collinsville,Okla.
Sandridge Airport
74021

Dear Sir;

I am very interested in outer space,and I would like to become an astronaut.But everywhere I have sent to said they didn't know if I could still become an astrnaut. So I would like to know if I could still become an astronaut. Also if you can,find out if there is such an application form that when I get out of school that I could go straight from high school into training.I am only 13 years old but I have made uo my mind that I want to become an astronaut.I would really appreciate the information.THANK YOU VERY MUCH.

Sincerely yours,

Andy Sorensen

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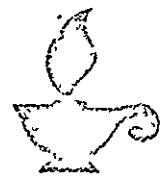
NASW-3007

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)



June 1, 1978

Andy Sorensen
RR 2 Box 872
Collinsville, Oklahoma 74021

Dear Andy:

We encourage you to maintain your interest in the astronaut program and space exploration. However, it is not possible for you to pursue this goal as a high school graduate. As I understand it, all astronauts have earned one or more college degrees. The major field of study in college is usually engineering.

Most of the astronauts in the program now are aeronautical engineers and have completed military pilot training. You should be able to obtain more specific information from:

Astronaut Office
Lyndon B. Johnson Space Center
National Aeronautics & Space Administration
Houston, Texas 77058

Best wishes for the future.

Sincerely,

Bill Dodd d/w

William G. Dodd
Senior Industrial Specialist

WGD/sgw

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

Badger Meter, Inc. Precision Products Division

6116 East 15th Street
Tulsa, Oklahoma 74115 (918) 836-8411

William G. Dodd
Senior Industrial Specialist
KIAC
Southeastern Oklahoma State University
Durant, Oklahoma 74701

June 1, 1978

Bill,

In answering your previous letter, I would like to place a purchase order for the following reports:

N77-10306	Sound Propagation Through Nonuniform Ducts
N77-10307	Nonlinear Periodic Waves
N77-10308	Features of Sound Propagation Through And Stability Of A Finite Shear Layer
N77-10313	A Simple Solution of Sound Transmission Through An Elastic Wall To A Rectangular Enclosure, Including Wall Damping And Air Viscosity Effects.
N77-10314	Parametric Acoustic Arrays: A State Of The Art Review.
N77-10316	One-Dimensional Wave Propagation In Particulate Suspensions
N77-10317	A Correspondence Principle For Steady-State Wave Problems
N77-10319	A Microscopic Description Of Sound Absorption In The Atmosphere
N77-10320	Propagation Of Sound In Turbulent Media
N77-10322	Diffraction Of Sound By Nearly Rigid Barriers
N77-10326	Acoustoelaticity

I wish to express my appreciation for your assistance in expediting this purchase order.

Cordially,

Mike Newell
Electronics Manufacturing Engineer

File
NASW-3007

KERR INDUSTRIAL APPLICATIONS CENTER

June 7, 1978

Mr. Mike Newell
Electronics Manufacturing Engineer
Badger Meter, Inc.
6116 East 15th Street
Tulsa, Oklahoma 74115

Dear Mike:

We have the reports that you ordered on June 1 -- rather, we have the microfiche.

In the interest of time, KIAC has reproduced the reports and they are enclosed with this letter. You will note that all pages do not reproduce as clearly as others, but we think they are readable. In the past, we have had success in making dim pages more readable by duplicating them (perhaps on Xerox).

Let us know if this is not satisfactory. We have completed the purchase requisition for this order, as well as the one for documents ordered in March.

Sincerely,

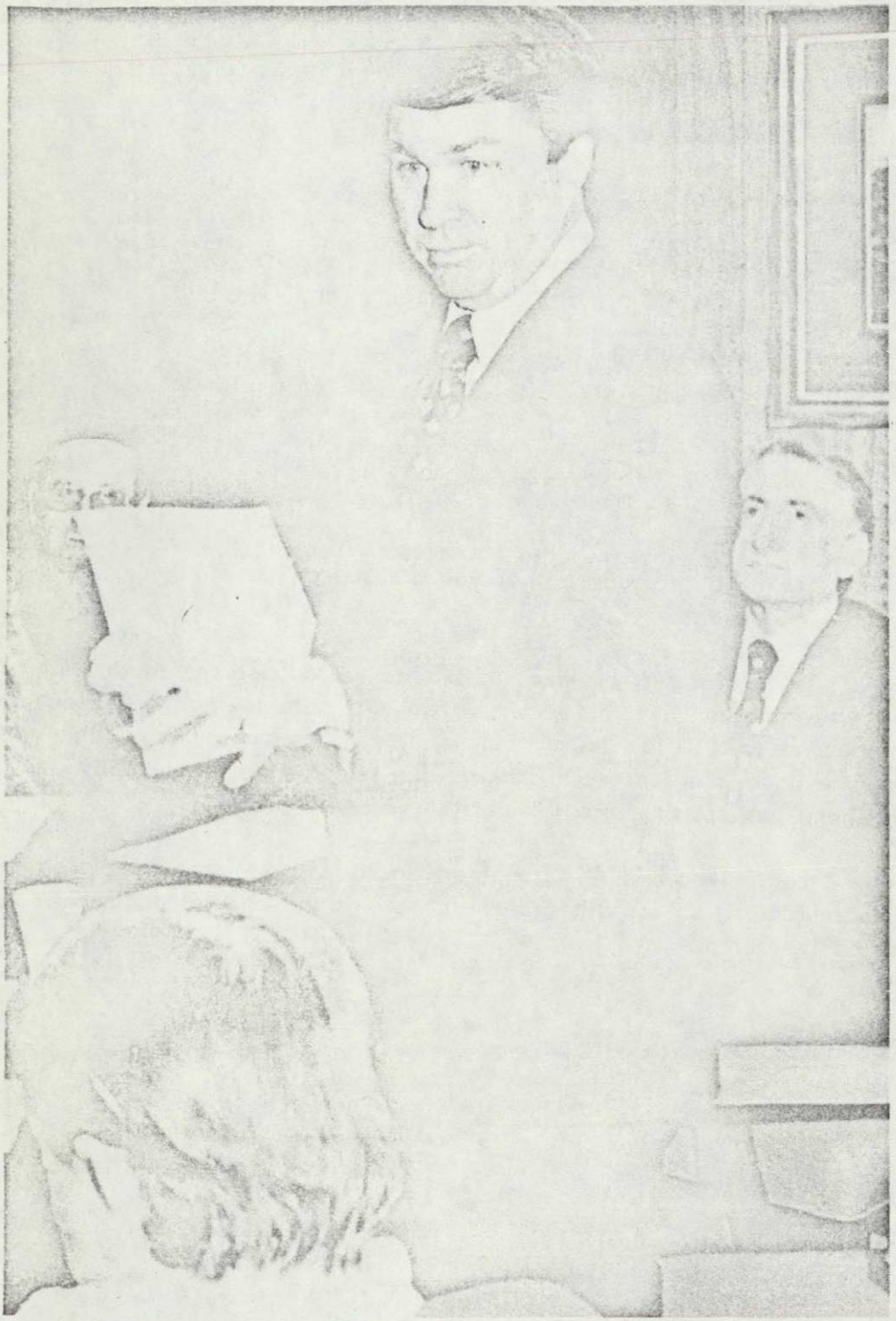
Bill

William G. Dodd
Senior Industrial Specialist

WGD/sgw
Enclosures

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY DURANT, OKLAHOMA 74701 PHONE 405-924-0121

SSU's TUSC Gets New Name

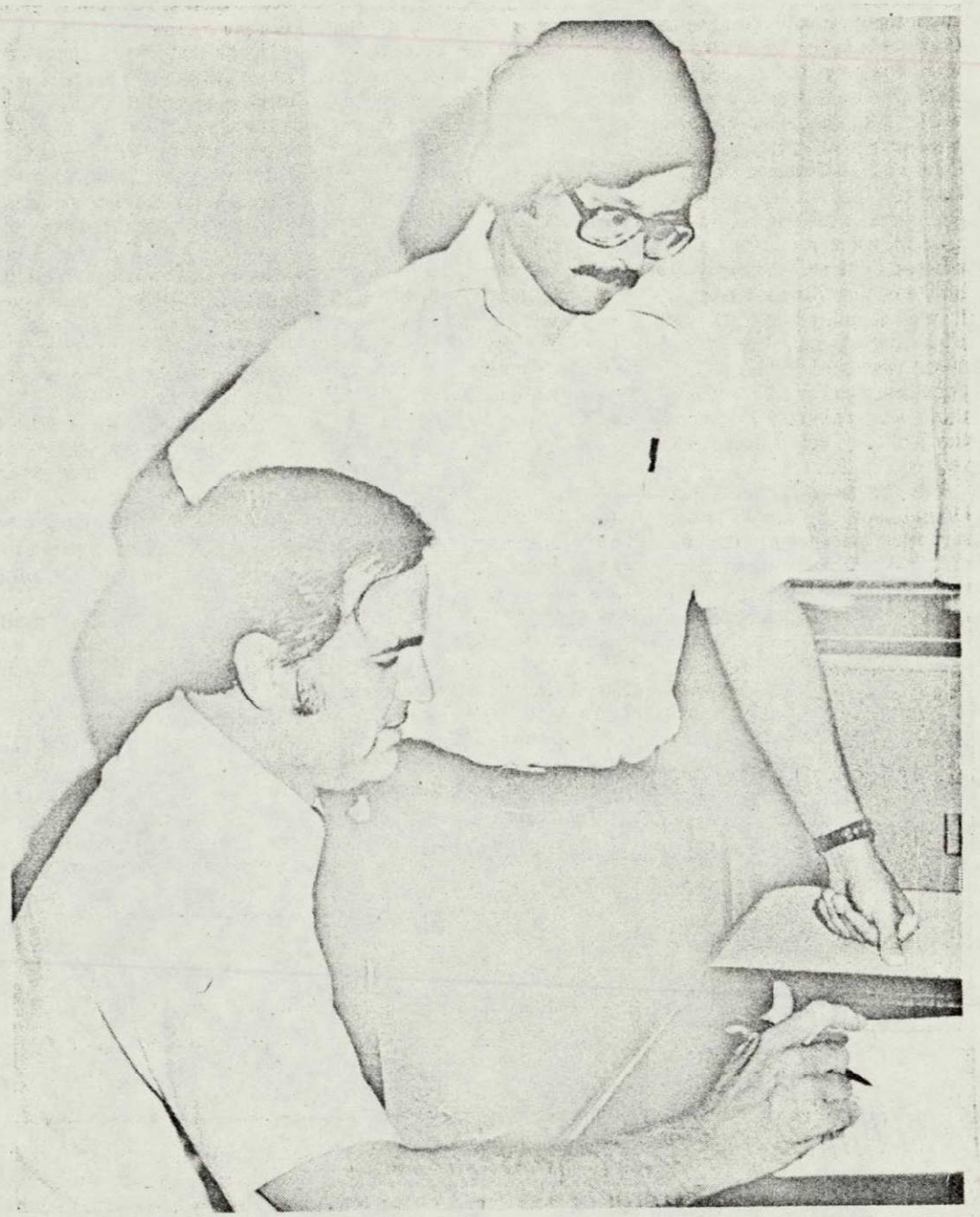


DISCLOSING PLANS FOR EXPANDING Technology Use Studies Center and renaming it Kerr Industrial Application Center is Congressman Wes Watkins (center). SSU president Leon Hibbs (left), NASA Technology Utilization director Louis Mogavero (right) and State Rep. Guy Davis were among those present for the announcement. Funding for the center has been increased to $125,000 for fiscal year 1978 and is expected to increase to $225,000 in the next few years.

(Democrat Photo)

Durant Daily Democrat, Sunday, February 19, 1978

KIAC At Southeastern Is Showing Sign Of Changes



THE NAME'S BEEN changed but what was once the Technology Use Studies center is still working to share results of space agency research with private industry, under new director Dr. Bob Oliver (seated) and technical operations specialist Owen Grimes. Oliver originally is from Springer, and Grimes grew up in Durant. (Democrat Photo)

Durant Daily Democrat, May, 1978

AVIATION TECHNICAL NEWS

PUBLISHED BY TECHNOLOGY USE STUDIES CENTER

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY

DURANT, OKLAHOMA 74701 AREA CODE (405) 924-0121 EXT. 376

SPONSORED BY THE TECHNOLOGY UTILIZATION DIVISION NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Vol. V, No. 1 February, 1978

COST REDUCTION

Atlas-Centaur class satellites with a maximum weight of 3400 lbs. and a maximum diameter of 9 feet can be launched currently for $24.5 million (1975 dollars). The same weight and diameter satellite can be launched from the Space Shuttle for $13.3 million.

Here is the formula for figuring the cost of launching items from the Space Shuttle: $20,000,000 times 4/3 times the weight of the item in pounds divided by 65,000. Or, the last computation may be the length of the item in feet divided by 60. The computation which gives the highest dollar is the one that applies.

HONORED ALUMNUS

Lt. General Ira C. Eaker (USAF Ret.) was the recipient of the Wright Brothers Memorial Trophy awarded by the National Aeronautical Association in December, 1977. The city of Durant, Oklahoma, named its airport after Ira Eaker many years ago and Southeastern Oklahoma State University selected him as "Honored Alumnus of the Year" in 1976. In the town and on the campus, there will be found overwhelming agreement with NAA's selection of General Eaker for the Wright Brothers' trophy.

CONCEPTION TO HARDWARE

"Historically, major aerospace programs have required long lead-times between conceptual and operational phases, with fifteen years as a typical figure." Somebody or some entity must think and prepare for the needs 10-20 years from now. Langley Research Center has made a parametric study to establish the general characteristics of a vehicle that will be the replacement for the Space Shuttle. John J. Rehder wrote the report (TP-1045). LRC chose a vertically-launched, hydrogen-fueled, single-stage reusable vehicle with dual position rocket nozzles and confined the study to the ascent-to-orbit portion of a mission. The report does not and did not intend to define hardware; but rather, the study provides data for quickly evaluating likely configurations for detailed studies. LRC has started work on the long lead-time items for the Space Shuttle's replacement.

NEW HIGH SPEED AUTOPILOT

Dryden Flight Research Center has found that the high speeds attained by such aircraft as the YF-12 and the XB-70 imposes an impossible task on traditional types of autopilots. We refer here to autopilots that actuate flight control surfaces only, as traditional types. At Mach 3 the normal changes in temperature and pressure we encounter flying cross-country appear as rapid changes. Altitude deviations of plus or minus 4000 feet and speed differences of over 30 mph have been reported while the aircraft was on the old-type autopilot. DFRC has combined throttle control with aerodynamic controls in an autopilot system for high performance aircraft. On the YF-12 the two systems, along with newly developed data sensors, have functioned in a complimentary fashion which has enabled the aircraft to maintain a high degree of flight path control precision even at high speed cruise conditions over extended periods of time.

(DFRC Release #19-77)

BUDGET

The total federal budget presented to Congress in January, 1978, by President Carter totals $500 billion. The President's budget provides about $4 billion for NASA which is approximately the same level of expenditure as was in the previous budget. The ratio of $4 billion (for NASA) to the total $500 billion budget means that approximately one cent out of each $1.25 of federal expenditure is allotted to NASA.

THE UNKNOWN

Allegedly, during World War I, pigs were driven ahead of troops to set off land mines. And, cattlemen put the least valuable cow in a new pasture to check for poisonous or dangerous plants before turning in the herd. NASA is following the same philosophy with flying spacecraft. Pioneer 11 gave us a close look at Jupiter in 1974. It is enroute to space beyond our solar system via Saturn. NASA officials decided to use Pioneer to test for dangers of the rings around Saturn before risking a Voyager in that unknown environment. Pioneer will swing within about 18,000 miles of the outer ring of Saturn and then slide down to within about 15,000 miles of the surface of the planet on its way out. In 1979, this maneuver will give a sampling of the rings before we send Voyager I into the rings in November, 1980.

AILERON--SPOILER

Bruce J. Holmes, in NASA CR-2832, uses this definition for the two devices controlling roll in an airplane: ". . .roll-control spoilers . . . an aerodynamic device which creates airplane rolling motion by the mechanism of separated flow on only one wing at a time. An aileron roll-control system, on the other hand, creates airplane rolling motion by changing lift on both wings simultaneously (by deflecting the wake due to change in camber)."

HISTORY OF AVIATION COLLECTION -- Change in Location

George Haddaway, who for more than forty years was editor and publisher of "Flight" Magazine, started a project in 1963 which established the History of Aviation Collection at the University of Texas, Austin. What George starts, George finishes; and UT came up with a very fine collection. Recently Adm. Charles Rosendahl's widow, Jean, gave the Admiral's collection on the history of lighter-than-air aviation to the UT collection. Adm. Rosendahl was the senior surviving officer of the crash of the dirigible Shenandoah in a storm in 1925. He was present when the Hindenburg crashed at Lakehurst NAS and was later CO there. In the collection, there are approximately one million pieces, including books, correspondence, memorabilia, and technical data.

After the Rosendahl addition, the UT Board of Regents noted that the collection had outgrown the space at UT Austin. The Regents approved the removal of the entire collection from Austin to the library at UT Dallas. Prospective donors or users of the collection can now access the library by sending inquires to Curator, History of Aviation Collection, Eugene McDermett Library, University of Texas, Box 643, Richardson, TX 75080. Richardson is a suburb just north of Dallas.

NAVIGATION

The two Viking spacecraft have told us more about Mars than has been known throughout recorded time and we are still learning from the Viking system. The Mars landers communicate with Mars orbiters which are still very much in business. Viking Orbiter-1 (VO-1) was used in February, 1977, for an excursion into an exercise which demonstrates that it is presumptuous to predict what will inevitably be learned from space exploration. To illustrate:

Mars has two satellites. The largest is Phobos which is only about 13 miles in diameter, if indeed it has a diameter. It is more of a "glob" than a sphere. Phobos orbits Mars each 7.7 hours. The orbit period of VO-1 was changed to be a multiple of the Phobos' period. (VO-1 made three trips while Phobos made one.) The orbit of Phobos and VO-1 became almost tangent at one point. They came within 80 km of each other and pictures of Phobos were made, as well as were other recordings.

The distance between Mars and Earth varies between about 55.3 and 396.6 million km. Mars rotates each 24 hours, 37 minutes, 22.7 seconds and travels around the sun at about 86240 km per hour. The computations involved in bringing VO-1 and Phobos into close proximity without colliding are truly astounding to one who has had difficulty in defining the difference between deviation and variation of a magnetic compass system.

ROCKET-POWERED FLIGHT, manned

The first American flight of a rocket-powered aircraft was made on August 23, 1941. The aircraft was an Ercoupe with the prop removed and was piloted by Captain H. A. Boushey, Jr.

Jet Propulsion Laboratory had a contract for the development of JATO (Jet Assisted Take Off) for the Army Air Corps and the flight was made with a battery of the JATOs attached under the wings of the Ercoupe. Note that the rocket bottles were called "jet" and not rocket. The military steered away from the word "rocket;" because, in the words of General Hap Arnold, it sounded too "Buck Rogerish."

A major problem in the development of JATO was getting the propellant to burn at a slow, steady, controlled rate. On a preliminary flight with one JATO under each wing, Boushey actuated the system at 3000 feet. Ground observers were elated to see the white jet trail stream behind the aircraft. The elation was short-lived; because, as soon as the sound reached them, they knew that one of the JATOs had exploded with a big bang. On August 8, one of the last ground tests was conducted. Six units were on the aircraft for taxiing tests. When the pilot hit the actuating switch, one of the units exploded. The explosion resulted in a ten-inch hole in the aft fuselage and a damaged bulkhead; the nose of the unit skidded about a hundred feet ahead of the aircraft. A statement in the JPL report concludes: "The pilot deserves credit for his willingness to continue flight tests as soon as the airplane was repaired."

MATERIALS

Aerospace progress is closely tied to the advancement of propulsion. In turn, propulsion is tied closely to metallurgy or material advancement. Many believe that the alloying of metals has about reached the point of diminishing returns and interest has largely turned to composites and ceramics. At least one old and prestigious engine manufacturer went "belly up" when it contracted to deliver jet engines with composite fan blades but couldn't meet the specifications. Advancing the "state-of-the-art" in materials is expensive and very "iffy." Thus, if aerospace, as well as automotive propulsion, and structure are to advance, it is appropriate that we all shoulder the load.

The Air Force has entered a contract with Airesearch for the development of ceramic jet turbine blades or rather a process for fabricating them. At this stage, Airesearch can produce the small ceramic blades (less than an inch long) for something under $500 per blade. The blade is a part of a turbine wheel less than 8-1/2 inches in diameter. Ceramic blades will raise the temperature tolerance of the wheel by about 150 degrees F. Keep in mind that these blades will be under tremendous stress imposed by the high rotating speed of the turbine as well as by the temperature. The blade must have a precise airfoil shape. Ceramic stator blades (which, of course, do not rotate) are presently pressed from a powder into final shape and then put in a furnace and held at 3000 degrees F for several days. At present, the turbine blades are pressed from the powder into a 9" x 11" bullet and then machined by diamond grinding and ultrasonic methods to a precise airfoil shape. Ceramic materials are cheap and temperature tolerant, but we need a process which will get around their brittleness. Let's wish Airesearch and the Air Force great success.

There is no stronger force in nature than an idea whose time has come. About the turn of the century, it was the idea of flying. -- Rudolf Nebel

ROCKETRY, Early Development

Manuscripts recently discovered in Sibiu, Romania, indicate that the first military usage of rockets in the West occurred in that area between 1529 and 1569. The author of the handwritten report gives detailed drawings of the two-stage devices. The first stage casing was made of material that would burn along with the powder propellant, and there were no problems in separating the stages. From that medieval time until about 1900 some progress was made.

In 1912 the Germans, under the leadership of Alfred Maul, developed a very sophisticated-sounding rocket for battlefield surveillance. It contained a camera which produced extremely good detail from a height of 800 meters. The camera was mounted on a gyroscopically stabilized platform; the camera shutter was tripped by an electropneumatic device powered by a small battery; and timing for the photographic system was provided by an inertial switch that functioned when the rocket reached its maximum height. The parachute recovery system was reliable.

What put the surveillance rocket system out of business? Airplanes.

(NASA Conference Publication 2014)

MACH NUMBER

In 1928 Switzerland's Professor J. Ackeret developed a paper entitled, "Air Resistance at Very High Speed." In the paper, the scientist wrote,

> In aerodynamics of higher speeds, the proportion v/a comes up time and again. (v equals speed of the examined body, or the airflow, respectively; a equals the speed of sound). Since the well-known physicist Ernst Mach recognized the basic significance of this proportion with particular perception, v/a may justly be termed Mach Number.

The term has been in aeronautics since Professor Ackeret's suggestion.

Rudolf Nebel asked the German army for assistance in building an airplane in 1912. The army replied, ". . .aircraft can never have military significance because flying an airplane requires acrobatic agility."

This newsletter is not published on a fixed calendar basis. When TUSC has received research results affecting general aviation to a significant degree, we try to get the information to our readers.

Any comments, suggestions, or criticisms you care to share with us, are always welcomed.

A. M. Moore, Editor

AVIATION TECHNICAL NEWS

PUBLISHED BY TECHNOLOGY USE STUDIES CENTER

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY

DURANT, OKLAHOMA 74701 AREA CODE 405 924-0121 EXT. 415

SPONSORED BY THE TECHNOLOGY UTILIZATION DIVISION NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Vol. V, No. 2 May, 1978

NAME CHANGE

Effective with the next issue of the General Aviation News Letter you will notice a new name--the Kerr Industrial Applications Center. The name selected is in honor of the late Oklahoma Senator Robert S. Kerr, who was a leader and catalyst in the legislation establishing the National Aeronautics & Space Administration.

The Kerr Industrial Applications Center (KIAC) will be directed by Dr. Robert E. Oliver, who joined the Center staff May 1, 1978. Prior to coming to KIAC, Dr. Oliver worked for IBM at the Johnson Space Center in the development of software systems for the real time computer complex on the Gemini and Apollo programs. Dr. Oliver's work at IBM spanned 10 years with a break to complete doctoral studies in earth resources at Colorado State University. Following completion of graduate work, Dr. Oliver returned to IBM at JSC as an earth resources analyst. In his last duty at JSC, he was assigned to NASA's Large Area Crop Inventory Experiment (LACIE) and he worked with the Quality Assurance Section of the Planning and Analysis Division. In moving to KIAC, Dr. Oliver is returning to his native state. Dr. C. Henry Gold, director from July 1, 1968, through April 30, 1978, will continue his duties as Dean of the School of Business and Industry, within which KIAC functions.

Beginning July 1, KIAC will begin charging fees and will operate in the same mode as other industrial applications centers in the NASA technology transfer network at nine universities located strategically throughout the nation. These centers provide to high technology firms the R&D backup available through NASA scientists and engineers who work at the NASA field centers located at Ames Research Center, Moffett Field, California; Dryden Flight Research Center, Edwards, California; Goddard Space Flight Center, Greenbelt, Maryland; Johnson Space Center, Houston, Texas; Kennedy Space Center, Florida; Langley Research Center, Hampton, Virginia; Lewis Research Center, Cleveland, Ohio; Marshall Space Flight Center, Alabama; Jet Propulsion Laboratory, Pasadena, California; and Wallops Flight Center, Wallops Island, Virginia. Through direct access to the field centers, this technology transfer network provides to business and industry the latest in science and engineering.

Product liability causes periphery problems. If a better part is introduced into a production aircraft, it is prima facie evidence that the replaced part was defective.

APPLIED RESEARCH

The American Association for the Advancement of Science publishes a very prestigious and informative magazine called "Science." Vol. 200, No. 4338, dated April 14, 1978, has an article written by Dr. Jerry Grey, public policy administrator of American Institute of Aeronauti and Astronautics; Dr. George W. Sutton, vice president, AVCO Everett Research Laboratory; and Martin Zlotnic, project officer in the U. S. Department of Energy.

The article presents a compelling argument for applied research as a means for energy conservation. The authors cite four areas of technology in which they believe applied research can produce significant energy savings. It is pleasing, but not surprising, that three of the areas are regularly treated in our publication and most other aerospace publications. The four areas they consider ripe for exploitation are:

Ceramic Turbine Blades. Aerospace people are aware that ceramic parts for the hot sectio of turbine engines will make possible operations at higher temperature, thus, increasing their efficiency. Problems requiring applied research at this time include: methods of manufacturing and forming specific shapes, brittleness of existing ceramics, and a lack of tolerance for foreign object damage.

Magnetohydrodynamics Electric Power Generation (MHD). MHD refers to a sneaky way of generating electricity whereby it appears that the generation is accomplished without expending energy. The word "appears" is emphasized. The technology is based upon the traditional metho of electrical power generation wherein a conductor is caused to cut a magnetic line of force. In MHD the conductor is a plasma. Russia has fed electricity generated by MHD into the power grid serving Moscow for several years. It is believed that they feed foreign elements into the heat stream going to their steam boilers which causes the heat stream to conduct electricity as a plasma does. They then pass the heat stream through a magnetic field and collect the electricit thus generated. Aerospace personnel will recall that last spring a Lockheed C-5A hauled, non-stop, a 40-ton American-made super-magnet to Russia. This super-magnet will be used in a Russian-American joint applied research project trying to exploit MHD.

Supercritical Wing. The critical speed of an airfoil is reached when the speed on any por tion of the airfoil becomes supersonic. Carefully shaping the airfoil can delay the formation of supersonic spots along the airfoil. A perfect supercritical wing would have the airflow across a wing reach supersonic speed at the same time at every location on the wing.

Supercritical technology made its first appearance in the late sixties. It originated in the Whitcomb-led group at Langley Research Center. Supercritical wings are flying; aircraft are being built, utilizing the wing; and almost surely, many airplanes have been flying with at least derivitives of this technology for several years. It appears that much of the applied research has been done on this technology. It is most certainly an energy conserving/saving approach.

Fluidized-bed Combustion. This technology concerns burning coal more efficiently. Small coal particles are suspended in air ("fluid-bed") where the combustion is more complete, precisel

controlled, and heat transfer is enhanced. "Ballast" materials such as limestone, inert stone, and other materials are introduced into the bed to control emissions and to further promote heat transfer. The authors employ convincing reasons for extensive application research to utilize better this much-needed technology.

The referenced article has some very fine suggestions for future applied research. It mentions the reduction of drag in automotive vehicles; and the authors do a service for our language by grouping bits and pieces of long-recognized aerospace problems and calling it tribology. Tribology deals with lubrication drag, stress, and wear of moving machinery.

STIRLING CYCLE ENGINE

The Department of Energy (DOE) is examining many concepts and theories in its efforts to develop a better prime mover for aircraft/automobiles. Lewis Research Center has joined DOE for a look at the Stirling cycle for a more efficient engine. We have grown up with the Otto cycle in automobiles and prop driven aircraft. Most of our readers have grown up with the Brayton cycle jet engines. Although the Stirling engine idea is not new, it is hard for traditionalists to accommodate it in their thinking. During the compression stroke on familiar engines, fuel is injected into the cylinder and then ignited with a spark from the plug. In the Stirling cycle, no fuel is injected into the cylinder; there is no spark plug igniting fuel. Heat is added to the compressed medium from OUTSIDE the cylinder and through the cylinder walls. Heat for the engine can be generated from anything that will burn--wood, coal, petroleum, etc.

United Stirling of Sweden (USS) has an operating Stirling engine. It will provide a base line from which improvements will be measured. Mechanical Technology, Inc., (MTI) of Latham, New York, has a contract to develop a Stirling engine for automobiles. The development team led by MTI includes USS of Malmo, Sweden; and AM General, a subsidiary of American Motors. Lewis Research Center, the propulsion research center for NASA, will manage the project for DOE. Ford Motor Company is working on the first Stirling development contract, which was signed in September, 1977. (Information taken from Lewis News, April 14, 1978.)

WOMEN

Southeastern Oklahoma State University Aviation Program

The SOSU Aerospace Department has graduates flying in all segments of aviation. The department was pleased, but not surprised, to learn that Gail Gorski, a 1974 graduate, was the first woman pilot hired by United Air Lines. Gail was Honors Editor of the "Savage," the University yearbook, during her senior year; she was an active member of Alpha Eta Rho and a '74 candidate for homecoming queen. We offer our congratulations to UAL for selecting such an outstanding individual as Gail Gorski as a pilot candidate.

Elna Robson of Ithaca, New York, won the Wild Flower Chapter of the 99's scholarship award for the 1977-78 scholastic year. Elna didn't win the award by just showing up for flight lessons. She won it by showing some "hard-nosed" people that she can fly.

Gwen Zellner of Big Cabin, Oklahoma, won the John Boti III memorial award for her flying skills, and she was awarded a plaque for her outstanding leadership as president of the local Alpha Eta Rho chapter. This organization was a "men only" affair until Gail Gorski was accepted as a member. Because of Gwen's leadership ability and hard work, the membership, as well as the vigor, of the professional society has increased.

FLYING MAGAZINE EARNS AWARD

There was no doubt in the minds of many of the writers who attended the 40th Annual News Conference of the Aviation/Space Writers Association about the winner of the Outstanding Publication award. Publishing director, Edward G. Muhlfeld of "Flying" magazine accepted the $500 award for their September 1977 issue--the 50th Anniversary issue. The 430-page magazine/book is not only a truly remarkable history of aviation but it projects the future of avi tion about as well as anyone can. The issue has already become a collector's item. Muhlfeld donated the $500 award to the Aviation/Space Writers Association Scholarship Fund. Jim Greenwood of Gates Learjet, claimed (jokingly) that his firm should get the $500. Greenwood advised his company that perhaps a thousand people would write to Gates Learjet for a picture of their aircraft as shown in the "Flying" Anniversary issue. A small note on the picture offere a copy suitable for framing to any one who wrote to ask for it. The picture in a mailing tube plus the postage costs Gates Learjet about one dollar. Instead of "about a thousand" that Greenwood suggested would be the number requested, there have been more than 10,000 request to date.

SHUTTLE

Justifiably, we have put a lot of faith and planning for the future into the Shuttle. The system has attracted many payloads and offers opportunities for commercial research in an environment that has been beyond the reach of all of us until Shuttle. Most all communication satellites and other application satellites are being built and engineered for launching from the vehicle. Most of our planning for space exploration over this decade and the next is being done upon the basis of launching from Shuttle.

Media coverage of the program very frequently starts with the cost of the program used as an adjective, "the thirty-million-dollar gismo"; "the fifty-million-dollar piece of hardware"; and too frequently, the adjective "controversial" is added. It is not hard to find someone who is against any program imaginable and, thus, all programs can be described as "controversial." When a project is mentioned in the media as being the "controversial hundred-million-dollar" program, it attracts opposition whether the project involves a new type automobile, a fighter airplane, or a space vehicle.

The time for risking hardware in the Shuttle program is here. A mishap, whether it be man-made or a bolt of lightning, could wipe out the first vehicle. The slightest bit of the unknown in de-orbiting, re-entry, approach, and landing might cost a vehicle. Headlines reportin such catastrophic events would likely add another adjective and then we would have, "The controversial hundred-million-dollar bust . . . ."

Certainly, no one expects such calamities, but IF something happens to the first couple of orbiters, it might take 50 years to regain adherents of space exploration in numbers that would allow progress in the field. We, the human race, have a lot riding in the Shuttle.

SPACE ENGINE

The limits to the amount of propulsion capability of a space vehicle is a constraint that has promoted considerable study. If enough liquid rocket fuel is stored aboard for years of space maneuvering, then there is no room for pay load. The same can be said for solid rocket fuel. NASA has come up with a system where the space vehicle can "grow its own" propulsion power while the vehicle is on its mission.

The dictionary defines "ion engine" thusly: "a reaction engine that uses for propulsion a stream of ionized heavy atoms or molecules, accelerated by an electrostatic field."

NASA has worked out a system including a solar array for generating electricity which in turn is used to create an electrostatic field. Interaction of mercury with the electrostatic field accelerates the particles to provide propulsion. In 1969, ion rocket engines were placed in Earth orbit in the Space Electric Rocket Tests under direction of Lewis Research Center. The engines are still operable. (Information taken from Langley Researcher, September 30, 1977.)

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During the past 20 years, 10,300 man-made objects have been shot into space. Of these, 5,916 have returned to Earth. The only fatality from the space debris--a South American cow.

This newsletter is published on a quarterly basis. When TUSC has received research results affecting general aviation to a significant degree, we like to get the information to our readers.

Please be sure to notify us of any change in your address. Each letter returned to us costs 25 cents. Help us keep costs down by sending your correct address whenever there is a change.

Any comments, suggestions, or criticisms you care to share with us are always welcomed.

A. M. Moore, Editor

National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia
23665

NASA

JAN 19 1978

Reply to Attn of 115

A.M. Moore, Editor
Aviation Technical News
Southeast Oklahoma State University
Durant, Oklahoma 74701

Dear Mr. Moore:

We met in early September at the NASA Writers' Conference, held at the Kennedy Space Center.

The enclosed report is the result of a study last summer by a group of university professors working under a fellowship grant sponsored by Old Dominion University, Norfolk, Virginia, and the Langley Research Center.

Because of your publication's interest in general aviation, and because of the large amount of farming in Oklahoma, I thought the study report would be of interest to you

Sincerely,

Maurice Parker

Maurice Parker
Public Affairs Officer

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LEWIS RESEARCH CENTER
CLEVELAND, OHIO 44135

REPLY TO
ATTN OF 0112

January 24, 1978

Mr A. M. Moore
Technology Use Studies Center
Southeastern Oklahoma State University
Durant, OK 74701

Dear Augie:

I just obtained and read with interest the enclosed report, and thought that it might be of interest to you. You may, of course, have already seen it, but anyway this gives me an opportunity to tell you that we appreciate receiving your AVIATION TECHNICAL NEWS. My best to you and to Henry!

Sincerely,

Paul

Paul Foster
Technology Utilization Officer

Enclosure:
NASA TM-73831, A Review of NASA's
Propulsion Programs for Civil Aviation

Mr. Thomas W. Marsh
4661 MacKenzie Rd
Oscoda MI 48750

13 January 1978

Mr. A. M. Moore, Editor
General AViation Technical News
Southeastern Oklahoma State University
Durant, OK 74701

Dear Mr. Moore

Please put my name on your permanent mailing list to receive the "General Aviation Technical News".

Thank you.

Thomas W Marsh
THOMAS W. MARSH

AIRESEARCH MANUFACTURING COMPANY OF ARIZONA
A DIVISION OF THE GARRETT CORPORATION
402 SOUTH 36TH STREET P O BOX 5217 PHOENIX, ARIZONA 85010
TELEPHONE 267 3011

In reply refer to:
25-2061-0029-18

February 15, 1978

Technology Use Studies Center
Southeastern Oklahoma State University
Durant, Oklahoma 74701

Attention: A. M. Moore, Editor

Gentlemen:

Having recently run across your publication, "AVIATION TECHNICAL NEWS," and noting some applicable subject matter related to our technology area, I would like to be included on your distribution list.

Your news paragraphs are concise, well written, and contain enough technical content on which to base follow-on decisions.

Sincerely,

AIRESEARCH MANUFACTURING COMPANY
OF ARIZONA

Mr. M. R. Adams
Head - Propulsion Controls
& Accessories
Mail Stop: 93-180-503-3Q

MRA:jf

Gates Learjet Training Center P.O Box 9320 Wichita, Kansas 67277 316 722-5640

March 15, 1978

Gentlemen:

Please place me on your mailing list for your Aviation Technical News.

Wiley E. Burris
515 B Dunsworth
Wichita, KS 67212

Thank you.

Wiley Burris

JOHN S. HAMMOND II
15 OAKDALE DRIVE
MILLVILLE, NEW JERSEY 08332

APR 10 1978

April 3, 1978

Technology Use Study Center
Southeastern Oklahoma State University
Durant, Oklahoma 74701

Gentlemen:

As an aviation historian, writer, and speaker, I am the recent recipient of a copy of Aviation Technical News, and find it to be a most outstanding newsletter.

I would appreciate it greatly if it were possible for you to include me on your mailing list for future copies and would be pleased to defray the mailing cost or whatever.

Sincerely yours,

John S. Hammond II

JOHN S. HAMMOND II

JSH/ss

GRUMMAN AMERICAN AVIATION CORPORATION
P O BOX 2205, SAVANNAH, GEORGIA 31402

March 30, 1978

Technology Use Studies Center
Southeastern Oklahoma State University
Durant, OK 74701

Gentlemen:

Please advise how we might obtain a copy of the study entitled:

> "Study of Capabilities, Necessary Characteristics and Effectiveness of Pilot Ground Trainers" (FAA-RD-127 and AD#755681, 280 pages)

This study was discussed in your December, 1976 newsletter.

Your response is appreciated.

Sincerely,

Susan Davis

Susan Davis
Merchandising Coordinator
Marketing Services

SD:pwh

KERR INDUSTRIAL APPLICATIONS CENTER
(Formerly Technology Use Studies Center)

April 5, 1978

Ms. Susan Davis
Merchandising Coordinator
Marketing Services
Grumman American Aviation Corp
P. O. Box 2206
Savannah, Geoggia 31402

Dear Ms. Davis:

Thank you for your letter of March 30, 1978, in reference to the "Pilot Ground Trainers" article in our December, 1976, newsletter.

Attached are the report abstracts and an NTIS order form. As additional information, we have included the NTIS price schedule for documents.

Please feel free to contact us if we can be of further assistance.

Sincerely,

Bill Dodd

William G. Dodd
Senior Industrial Specialist

WGD/sgw

SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA 74701
PHONE 405-924-0121

P.O. BOX N-665
NASSAU
BAHAMAS.

JUNE 12, 1978

MR. A. M. MOORE, EDITOR
SOUTHEASTERN OKLAHOMA STATE UNIVERSITY
DURANT, OKLAHOMA, 74701

DEAR MR. MOORE,

I AM VERY HAPPY OF RECEIVING A COPY OF GENERAL AVIATION TECHNICAL NEWS AND I WISH TO RECEIVE IT. PLEASE MAIL IT TO THE ABOVE ADDRESS. THANK YOU VERY MUCH.

SINCERELY YOURS,

GREGORY THOMPSON.

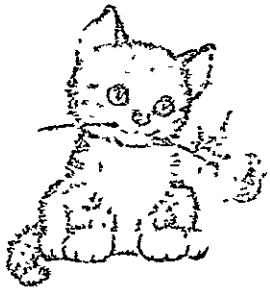
ORIGINAL PAGE IS
OF POOR QUALITY

DEAR SIR,

PLEASE ADD ME TO YOUR MAILING LIST FOR THE "GENERAL AVIATION TECHNICAL NEWS" I FOUND IT VERY INFORMATIVE & INTERESTING.

THANK YOU

MR. J. C. HENRY
1811 GREGG RD.
BELLEVUE, NEB
68005



FROM THE DESK OF
Barbara Wigley

June 28, 1978

Hi, Mr. Moore:

Thought you might be interested in getting the attached. I noticed your last newsletter had a write-up about women in Aviation.

This brochure came out with our Dallas Times Herald paper last Sunday.

Sure would like to see you. Maybe some day we can come back and visit.

Barbara

P.S. Enjoy your newsletter!

Southeastern Oklahoma State University
Durant, Oklahoma, 405-924-0121
Department of Business Administration & Management

June 30, 1978

Mr. A. M. Moore
KIAC
Russell Building
SOSU
Durant, OK 74701

Dear Augie:

Thank you so very much for sharing your aerospace knowledge with my Introduction to Business class.

Your presentation was so interesting and enlightening, and your enthusiasm is catching! All of us will appreciate scientific exploration and conclusions more, I'm sure.

Best wishes to you in your semi-retirement.

Sincerely,

Jackye

Jackye Gold

rp