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**NEWSLETTER**

**INTERNATIONAL TEST & EVALUATION ASSOCIATION**

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July 1981

Volume II

Number 3



OFFICIAL PUBLICATION OF ITEA



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**Manuscripts.** Submission of unsolicited articles or news items of interest to the T&E community is welcomed and encouraged. Articles should be typed, double spaced. A brief bibliography and a small black and white glossy photograph of article authors are desired. Only original (or quality reproduction) art and black and white photographic prints can be accepted. All submissions are subject to approval and editing by the ITEA Editorial Board. Mail submissions to Mr. B. S. Granum, 9508 Seddon Court, Bethesda, MD 20817. Tel (703) 379-5404.

**Advertising.** For details, including rates, see page next to back cover.

**Publication Schedule.** Published in January, April, July and September by the Headquarters of ITEA, P.O. Box 603, Lexington Park, Maryland. ITEA is a non-profit professional society dedicated to the advancement of test and evaluation education and technology. The Newsletter is an official ITEA publication mailed to U.S. members in accordance with the regulations of U.S. Postal Service non-profit mailing privileges.

**Purpose of Newsletter.** The Newsletter is published to provide a medium of information exchange among professional test and evaluation personnel. Statements of fact or opinion appearing in this Newsletter are solely those of the authors and are not endorsed by any government agency, industry or non-profit organization, including ITEA, unless specifically so stated.

**Membership Dues and Subscription Rates.** Annual membership dues of \$25 (active duty military \$15) includes the Newsletter. Non U.S. members require an additional first class mailing fee \$12 per year.

Dues for new members joining after August 1st are \$12.50 (active duty military \$7.50) for the remainder of the calendar year. Non U.S. members require an additional first class mailing rate of \$12 per year. Libraries and organizational subscriptions are \$35 per year in the U.S., \$45 foreign. ©1981



## DR. A.R. MATTHEWS

Test and Evaluation has been a key activity for many years, extending back to biblical times and beyond. The earliest biblical references are identified as "trying" or testing with evaluation as an implied function. History has shown that no great progress has been made until someone has lifted his head above the routines and ventured on a more comprehensive vision.

Early scientists such as Galileo (1564-1642), Newton (1642-1726) and Maxwell (1831-1879), along with more recent scientists such as Einstein (1879-1955), conducted testing of various kinds for validation of theories and/or mathematical definition. Edison (1847-1931), Bell (1847-1922), von Karman (1881-1963), and von Braun (1912-1977) were all inventors, scientists and experimentors. Many others could be cited to illustrate that experimental efforts were an essential part of the development of science and technology that created the Industrial Revolution and now the Technological Revolution. First, trying or testing was conducted to categorize phenomena placing them in an ordered arrangement.

The concepts of testing and evaluation thus evolved from efforts to vigorously define the laws of nature in physics with allied scientific and engineering fields which then created products needed by a technological society instead of creating knowledge for the sake of knowledge or understanding the universe. The products created were indeed man-made objects such as military hardware, consumer products and industrial manufacturing equipment, including paint, clothes, automobiles, batteries, engines, building materials, food, calculators, motors and tools.

The concept of total system testing also evolved in the early 19th century and has been making some progress, but it is definitely still inadequate. Consider the early testing of military equipment, buildings, bridges, drugs, transportation systems and food manufacturing or packaging. Many cases can be cited that are common knowledge where not only catastrophic failure has occurred but performance has been marginal with excessive operations and maintenance costs including the unfortunate death of innocent users.

NASA space achievements on one-of-a-kind systems have been noticeably successful even on advanced systems utilizing the most advanced technologies. In contrast, some major U.S. industries have lost out on many-of-a-kind products to foreign competition by customer use "testing" with other industries having customer acceptance problems of their products.

The use of simulation for testing is not new, but has been used for centuries with models. Sixty years ago analogue simulators were used for complex electrical power generation and distribution systems. Analogue and mathematical simulators of complex strategic warfare were developed in WWII. Modern digital simulators are used today not only to test complex systems, but to train operating personnel, validate logistic systems and others.

Simulation has demonstrated an enhanced degree of confidence for operation in an actual complex system, for example, with commercial airline pilots. But simulation cannot replace real hardware system tests in the real environment with real-life personnel any more than complex national or international economic mathematical models can prove the answer to inflation with a high confidence level. There are too many variables, often unknown.

In recent years the emphasis on testing has transitioned from R&D (performance) where T&E is still embedded (hidden) in the Annual Budget of the U.S. to the broader issue of acquisition which also includes training, procurement rates, logistics, operation performance, interfaces, shelf life, utility, the many 'ilities and life cycle costs. This transition is further complicated by technological advances in computer hardware and software as well as new man-made materials on which accelerated life tests are as uncertain as in the past.

What, then, is the key to T&E in the future? At present the engineering schools are reviewing the classic compartmentalization of technologies (engineering schools) and trying to address the broadest view of systems to include not only all technologies but economics and life-cycle factors including optimum updating and built-in testing.

So it should be with T&E. Let's re-evaluate the knowledge of T&E and recognize that T&E is not only learned on-the-job; but is also an academic specialty involving basic engineering and operational specialties including instrumentation, analysis, environmental studies, functional requirements, human factors, safety and economics. In fact, T&E should be a recognized major for a baccalaureate or masters degree in engineering.

The future development of societal needs is not only dependent upon R&D but on manufacturing technologies, economic justification, acceptable performance, operator skills requirements, reliability and maintainability. All this requires high confidence T&E before, during and after use, with evaluation of all side effects such as electromagnetic interference, down-wash, health and safety. Testing can be developed to evaluate these factors on future simple or complex systems. ITEA should contribute to worldwide standards for design and production of many products.

It has been suggested that the ITEA logo should have elephant hide shown around the perimeter since this toughness of practitioners is essential to the conduct of T&E.



### BRAD GRANUM

The President of ITEA, Dr. Matthews, and the Board of Directors were most kind in bestowing their confidence in selecting me as the new editor of the ITEA Newsletter. I welcome this challenge and opportunity. Working with me are Lee Hand, Associate Editor; Bill Smith, Publications and Current Events; Jan Moyer, Association and Chapter News; and Karl Kostenbader, Art and Photography. Though none of us are professional journalists, and all contribute our time on a part-time basis, I trust our enthusiasm for ITEA will maintain the momentum started by Dr. Matthews to make the Newsletter a prototype and precursor of a truly professional journal.

The Newsletter is divided into two major parts, feature articles and routine departments. All readers are encouraged to submit articles of professional interest in the T&E field to be considered as a feature article. The quality of these articles is what will largely determine the professionalism of the ITEA Newsletter (Journal). As with most other professional societies, ITEA is dependent on member authors to provide the thought provoking and informative articles that make the publication well worth reading. Sorry, no financial remuneration. But those who are published will have the rewards of professional recognition and the satisfaction of contributing to T&E education and advancement. So get those articles in!

Contributions to the several departments are similarly encouraged. The following is a brief description of each department:

**Editorial:** The editorial is the official opinion of ITEA on T&E related issues. Although the editorial is the responsibility of the President and/or Board of Directors, suggested editorials are welcomed.

**President's Corner.** As the name implies, this is reserved for whatever comments the President of ITEA may deem appropriate. I'm sure he would entertain your suggestions regarding topics of interest.

**Association and Chapter News.** This department covers such items as association sponsored symposia, educational activities, speakers, organizational and business matters of general interest to the membership. We hope the emphasis, though, can be on the chapters, their meetings, speakers, membership growth, technical, educational, and other activities.

**Committee Reports.** As occurring, this department will publish ITEA committee reports intended for the entire membership.

**Calendar.** A schedule of planned events of interest to ITEA members, with a brief description, if necessary, will be published under "Calendar." We'll include events sponsored by ITEA and its chapters (including chapter meetings) and other events that may be of interest, such as symposia sponsored by other professional societies. Not only are chapters encouraged to submit their schedule of meetings and events, but any member who is aware of a planned event of interest to the T&E community is asked to bring it to the editor's attention.

**Personal Viewpoints.** This department gives members an opportunity to sound off on any ITEA or T&E related subject, including comments on material published in the ITEA Newsletter. It is, in essence, a letter to the editor column.

**Who's Who in T&E.** We hope to feature a distinguished member of the T&E community in each issue of the ITEA Newsletter. At my insistence Dr. Matthews, our president and founder, agreed to be our first featured personality. There is no better way to start! We also will cover significant awards, assignments and promotions of those in the T&E community. All members are encouraged to recommend distinguished individuals who might be featured and send us news of significant awards, assignments and promotions (don't be bashful, include yourself).

**T&E Events.** Bill Smith, responsible for this department is a great person, but he's not a full-time reporter. Help him out and send in news items of interest to the T&E community. Let us know about new technology, new or improved test facilities, new educational or commercial ventures related to T&E and, in general, anything to keep us up-to-date on what's going on in the T&E world. We'll publish it under "T&E Events."

**Literature Reviews.** Similarly, though Bill Smith has the responsibility for this department, he cannot be expected to do all the literature reviews himself. If you've read a book, report or technical paper on some area of T&E that can be obtained by the general public, by all means consider submitting a review. If you are willing to do a review, but have no specific literature in mind, let us know.

**Membership Summary.** In addition to summarizing the latest membership status, this department will list new members joining since the last issue, at least until the growth rate becomes so phenomenal it becomes impractical.

**Featured Facility.** Each issue will feature a test and evaluation facility. There is no intent, or desire, to restrict these to military facilities. If you know of an academic, commercial, industrial, or nonmilitary government facility that would be appropriate to feature, let me know about it.

Again I stress, the quality of your ITEA Newsletter (hopefully soon to be a Journal) will be based on its content, and the content will be largely based on what we receive from members. Appropriate credit will be given for each article or item published. Although all submissions are subject to editing and approval by the editorial board, any changes recommended by the Board that could affect substance will be cleared with the author before publication.

All articles should be double spaced, typed. It would be appreciated if all other submissions were the same, but if we can read it, we'll consider it. Only black and white photographic prints (not negatives) and either original art or quality reproduction can be accepted.

It will be my practice to acknowledge every submission. Submissions will be returned on request if a stamped, self-addressed envelope is provided. All submissions should be sent to:

Mr. Brad Granum  
9508 Seddon Court  
Bethesda, MD 20817

Please contact me at (703) 379-5404 if you have any questions or a last minute news item.



## DR. "MATT"

ITEA growth, activities and scheduled events are exceeding my fondest dreams. The need and accomplishments of ITEA are frequently cited in correspondence with members. This success is largely due to the excellent staffing of the professional society. The Executive Committee (Officers) and Board of Directors are operating effectively with a common base of corporate knowledge of ITEA.

The by-laws are under revision for review and approval by the Board. We have not only obtained official IRS tax exempt status but also a non-profit U.S. Postal permit. The State of Maryland is expected to soon approve sales tax exemption for ITEA. Membership certificates and colored decals have been designed and will be available this fall.

The ITEA organizational team is working smoothly so we will now concentrate on staffing a set of professional groups. These groups will contribute to the technology and management of T&E through educational seminars and technical symposia as well as publications.

Incidentally, ITEA has obtained a professional society liability insurance policy in accordance with a Board decision on June 24, 1981. The liability insurance program provides coverage to protect all officers, the members of the Board, and members from suits stemming from activities on behalf of ITEA, Incorporated. Bodily injury, property damage and personal injury coverages are included as are members named as additionally insured while conducting official ITEA activities.

We must establish a full-time ITEA Headquarters office that can handle routine correspondence, files, records, membership addresses with revisions, financial records, dues payment, certificate processing, bank deposits, and other activities. For the past year, I have done these items with great pleasure, but the ever increasing workload requires secretarial assistance (preferably by contract) and, ultimately, a Headquarters administrator. Financial limitations prevent immediate implementation. ITEA deeply appreciates the assistance rendered by White Scientific Consultants in their Lexington Park office during the initial growth stage.

It is now essential for ITEA to establish an administrative office operated by ITEA or under contract. Current ITEA income has partially covered the start-up costs and publication of the Newsletter. Many generous donations have also made this possible.

ITEA urgently needs funds from corporate memberships and advertising. Proceeds from symposia and seminars are another potential source. Preliminary investigation of contract publication of The Official ITEA T&E Journal have been explored and is feasible with revenue generated. I hoped to transition the Newsletter into the Journal so have initially created a combined publication.

Let us be very pleased to have formed such a successful professional society that its progress is only limited by current financial resources. The growing demand for ITEA services with expansion in industry and academia will provide the needed resources in combination with volunteers that are truly professional experts.

## ASSOCIATION NEWS

## DR. "MATT"

**Membership:** The growth is significant during the last seven months - January 2 to July 31, 1981. Membership increased from 69 to 204 or approximately 300 percent. Nevertheless, the minimum goal was 250 by July 31. We need your help to increase efforts in a membership drive.

**Chapters:** From January through July 1981, three chapters have been dedicated and there are at least three more developing at Point Mugu/Port Hueneme, Dallas/Fort Worth, and Eglin AFB.

**Regions:** As chapters evolve it will become desirable to establish geographic regions with representation on the Board. Suggested geographic regions (identified by the first ZIP digit for computerized mailing) would be: Northeastern (0, 1), Middle Atlantic (2), Central (3, 4), Midwestern (5, 6, 7) and Western (8, 9). Please give your ideas to members of the Board.

**Honorary Members:** See article herein. ITEA is very fortunate to have the support and blessings from the Defense T&E community. Replies have emphasized the need for a strong T&E professional society. Our Association also tenders honorary memberships to individuals in

industry and academia and will limit the total to a distinguished group.

**Symposia and Meetings:** The two day Southern Maryland technical symposium was a great success and deserved the highest compliments for the professionalism demonstrated. Several additional luncheon meetings have been held by the Tidewater and George Washington Chapters with outstanding technical speakers. The 1982 International Symposia is being actively developed to be a milestone event.

**Standing Committees:** These committees are meeting with at least three members each and not only accomplishing their primary objectives but in some cases obtaining a synergistic effect by matrix operations among committees. Committee Chairmen and members are to be congratulated for their outstanding performance.

**Newsletter:** This issue was assembled into camera-ready copy and completed in a voluntary effort by Brad Granum. ITEA is grateful to be able to solicit material from members and the professional help from Brad.



## ITEA gathering

# Symposium to explore advanced air systems

The Southern Maryland Chapter of the International Test and Evaluation Association (ITEA) will present an advanced air systems symposium at Patuxent River June 24-25. The symposium will explore technologies which have a significant impact on the next generation of military aircraft.

Government keynote speaker will be Capt R.J. Miller, assistant commander for research and technology, Naval Air Systems Command. Industry keynote speaker will be Dr. Renso Caporali, vice president for development, Grumman Aerospace Corp. Luncheon speakers include Capt Walt Estridge, director of flight training for American Airlines, Inc., and RAdm John G. Wissler, NATC commander. Capt Estridge will talk about total simulation training. RAdm Wissler will discuss aircraft testing. "Old Art or New Technology."

Some of the topics to be presented include aircraft flight-by-light systems, very high speed integrated circuits, voice-interactive avionics, RF target simulator system, trends in flight simulator technology and global test and evaluation technology.

Preregistration is required. The registration fee of \$55 includes two lunches and all materials. Checks may be mailed to Southern Maryland Chapter, ITEA, P.O. Box 203, Patuxent River, Md. 20670.

Page 2, TESTER, Patuxent River, Md., Friday, June 12, 1981

**Southern Maryland Chapter**  
P.O. Box 203  
Patuxent River, MD 20670

**President:** A. M. Ebeltoft  
**Vice President:** W. L. Spurgeon  
**Secretary:** F. G. Healy  
**Treasurer:** T. L. Ramey

During the successful educational/technical symposium, the Southern Maryland Chapter held a regular meeting on June 26. The "Advanced Air Systems - The Impact of Technology on Test and Evaluation" has been reviewed elsewhere in this publication.



# ITEA convenes its first major symposium here

TESTER, Patuxent River, Md., Friday, June 19, 1981, Page 3

The Southern Maryland Chapter of the International Test and Evaluation Association convenes its first major symposium at the Naval Air Test Center on Wednesday.

The two-day program on advanced air systems and their impact on test and evaluation, operations and logistics support will feature speakers from the military services and major defense contractors.

The keynote speaker for the military is Capt R.J. Miller, assistant commander for research and technology, Naval Air Systems Command. Assuming his post in July 1980, Capt Miller has had five NAVAIRSYSCOM assignments in the course of his 29-year naval career. He is a Korea and Vietnam veteran and with more than 4,000 hours of flight time as a naval aviator.

The keynote speaker for industry is Dr. Renzo L. Caporali, vice president for development, Grumman Aerospace Corp. A former naval aviator, Dr. Caporali's formal education includes a Bachelor of Civil Engineering degree, Master of Mechanical Engineering degree, Master of Aeronautical Engineering degree, Master of Arts in Aeronautical Engineering degree and Doctor of



Capt. R.J. Miller



Dr Renzo Caporali

Philosophy in Aeronautical Engineering degree.

Dr. Caporali joined Grumman in 1959.

Other speakers include Franklin C. Spinney of the program analysis and evaluation office in the Tactical Air Division of the Office of the Secretary of Defense; RAdm John G. Wissler, NATC commander; Capt Walt Estridge, director of flight training, American Airlines, Inc.; Dr. Edward A. Stark, Link Division, Singer Aerospace; Joel Tery, U.S. Army Research and Technology Laboratory; Ralph Szygenda, Texas Instruments, Inc.; LCdr Steve Harris, Naval Air Development Center; Maurice Belrose; U.S. Army System Simulation & Development Laboratory; and Maj Gen Pat Powers, USA, Ret., T&E International, Inc.

Because of the limitation on participants—125 total—preregistration is required. Registration information may be obtained by calling Bill Spurgeon, Southern Maryland Chapter, ITEA, ext. 4262.



## FEATURE ARTICLE

### OVER 100 ATTEND SOUTHERN MARYLAND SYMPOSIUM

ITEA's Southern Maryland Chapter, in keeping with their motto, "First in ITEA, First in the Nation," recently hosted the first educational/technical symposium organized under the auspices of the Association. The symposium, entitled "Advanced Air Systems-The Impact of Technology on Test and Evaluation," attracted over 100 registrants to the beautiful Cedar Point Officer's Club at the Naval Air Test Center, Patuxent River, Maryland. Keynote speakers were Dr. Renso Caporali, Vice President, Development for Grumman Aircraft Corporation, and Captain R. J. Miller, USN, Assistant Commander for Research and Development, Naval Air Systems Command. Additional speakers represented the Office of the Secretary of Defense, the U.S. Army and Navy, American Airlines, Singer-Link Corporation, Texas Instruments, Boeing Aerospace, and T&E International, Inc.



In excess of 100 participants gather in the Cedar Point Officer's Club, Patuxent River, Maryland to attend the Southern Maryland Chapter Symposium.

Southern Maryland Chapter President Al Ebeltoft acted as Symposium Chairman and conducted the proceedings with a cool professionalism much admired in the comments of both speakers and participants. "I can't say too much about the dedicated and hard working members of this Chapter," says Al. "This was a team effort and the whole Chapter organization shares credit for what can only be called a tremendous success." Special recognition is due the Southern Maryland Chapter officers who chaired one of the symposium operating committees. They are: Bill Spurgeon (Technical Committee); Frank Healy (Arrangements Committee); and Tom Ramey (Registration Committee). The Chapter also wishes to extend special appreciation to RADM J. G. Wissler, Commander, Naval Air Test Center, who made possible the use of the club facility and who acted as keynote speaker for the program segment addressing advanced T&E facilities.

Dr. A. R. Matthews, Founder and President of ITEA along with nine members of the Board of Directors, was present at the symposium and expressed his delight at the success enjoyed by the Chapter. "An educational experience such as the fine symposium prepared and conducted by Southern Maryland Chapter is the essence of what



Captain Walt Estridge, Director of Flight Training, American Airlines, challenges symposium participants with his presentation entitled "Total Simulation Training." As site of the Navy Test Pilot School, Patuxent River personnel were particularly interested in AA experience in this area.

ITEA can and should be doing for members. It is this kind of activity which makes a professional society truly professional," Dr. Matthews told chapter members in delivering his congratulations.

The newsletter wishes to add its sincere congratulations SUPER JOB, SOUTHERN MARYLAND CHAPTER!



Southern Maryland Chapter President Al Ebeltoft (left) congratulates Dr. Renso Caporali on his excellent keynote address to the symposium. Dr. Caporali holds the new attaché case (still boxed) given to all speakers by the Chapter.



## ARMY TESTING IN ALASKA

**William J. Haslem**  
Technical Advisor  
Cold Regions Test Center  
Alaska, USA  
APO Seattle, WA 98733

On October 18, 1867, the U. S. Steam Sloop OSSIP-PEE steamed into Sitka Harbor for the purpose of receiving the Territory of Alaska from Russia. In a brief ceremony, Brigadier General Lovell H. Rousseau accepted the "territory and dominion" from Prince Maksoutoff. The Russian flag was lowered and the U. S. flag raised to the accompaniment of alternate 21-gun salutes from the Russian Garrison and the USS OSSIPPEE. The few Americans present cheered, standing on a small corner of a vast land purchased for seven cents an acre. The soon-to-be regretted decision to purchase Alaska was made by Congress largely as a result of the persistent and untiring pleas of Secretary of State William Henry Seward. "If we would provide an adequate defense for the United States, we must have Alaska to dominate the North Pacific," argued Secretary Seward.

From the fateful day in 1867 to the present, the U. S. Army has played a powerful role in the exploration, development, and government of Alaska. Although "Seward's folly" was the subject of derision at first, subsequent gold discoveries and inland exploration soon made it evident America had obtained a bargain well worth defending. Within two years after acquisition, the U. S. established military posts at Sitka, Fort Kodiak, Fort Kenay, Fort Tongass, and Fort Wrangell. Later, the gold rushes prompted establishment of Army outposts at other locations, including the vast interior. The Army built the first roads and established the first telegraphs in Alaska.

During World War II, Alaska was thrust into strategic importance, first as a highway for ferrying lend-lease aircraft to Russia, and secondly, when the Japanese occupied some of the Aleutian Islands. The need for secure supply lines resulted in construction of the Alaska Highway, an Army project which had a great impact on the subsequent development of Alaska.

After the war, in 1946 and 1947, large scale task force operations were conducted by the War Department in northern regions. Task Force Williwaw was conducted on Adak Island, Alaska; Task Force Frost at Camp McCoy, Wisconsin; and Task Force Frigid at Big Delta, Alaska. These exercises were beset by problems, particularly in the personnel and equipment areas. It was concluded that testing of materiel should be separated from tactical operations, and that a permanent cold weather test board should be established. Initially, cold regions testing was performed at Devil's Lake, North Dakota; Flin Flon,

Canada; and Fort Churchill, Canada by teams from Aberdeen Proving Ground, Maryland; and, later, from Yuma Proving Ground, Arizona.

In July, 1949, the Arctic Test Branch was established at Fort Greeley, Alaska. Army reorganization in 1962 combined several arctic testing activities maintained by the technical services into the Arctic Test Board and placed this new organization under the U. S. Army Test and Evaluation Command (TECOM). In 1964, the Board was redesignated as the Arctic Test Center and, again in 1976, as the Cold Regions Test Center (CRTC). The latter name was given in recognition of the fact that CRTC does testing which qualifies materiel for all cold environments, not just for the arctic environment.

Today, CRTC is the Army's only cold weather test facility. Being a TECOM organization, its main mission is Army developmental testing, although operational tests are also frequently conducted by CRTC jointly with the Operational Test and Evaluation Agency (OTEA) or Training and Doctrine Command (TRADOC) elements.

Natural environment testing is an adjunct to, not a substitute for, climatic chamber testing. While chamber testing of prototype components and assemblies is an important environmental screening device, realistic and thorough testing of a complete system in the natural environment, using typical soldier operators and maintainers, is the final proof of a system's ability to function properly in cold regions.

The CRTC consists of a permanent cadre of 263 military and 25 civilian employees. This permanent cadre is supplemented by temporary duty personnel each winter, varying in number from 30 to 200, depending on seasonal workload. CRTC has 267,000 acres of land for testing, most of it remote and isolated. Data from remote ranges is collected and returned to central data reduction facilities by either microwave or land-line communications. Up-to-date minicomputers are available for on-site data reduction and analysis. Limited instrumentation is available for direct entry into the portable computers. Digitized video for weapons scoring and location is widely used. Low light level video systems are extensively used for data gathering during the long winter nights that exist during the primary test season. Temperature measurements are made using thermocouples, thermographic



## FEATURE ARTICLE

scanners, and remote infrared (IR) sensors. High speed cameras, muzzle velocity radars, IR chronographs, and velocity coils are also used for weapons testing.

CRTC tests a wide variety of materiel, varying from mittens to missiles. Recent tests of larger systems include the XM-1 Tank, Blackhawk Helicopter, and Roland Missile. Testing normally involves operation in the natural environment for about four to five months, usually from October until March. All equipment is operated and maintained by soldiers, and human factors data is one of the most important results of natural environment testing. The environment is severe and pervasive; it cannot be escaped by flipping a switch or by stepping out of a chamber and allows realistic and thorough testing for periods that are not practical in a climatic test chamber. Dynamic, full-performance testing allows an entire weapon system to be evaluated as a system, as it will be in actual use. The ever changing environmental conditions present real challenges and stresses that cannot be obtained in single-parameter test chambers. Every year CRTC finds important equipment deficiencies or shortcoming which did not show up in short-term, limited parameter laboratory testing. Discovery of these flaws is important, and much more economical during development than after an item is fielded.

CRTC is bulk funded by the Army under a level-of-effort concept. Department of Defense customers do not pay for labor or overhead for testing. Only nominal project-specific costs, such as transportation, special instrumentation, or fuel are reimbursible from the customer. This funding allows a DOD customer to conduct extended and realistic cold regions testing in an economical manner.

History is replete with examples of armed forces that were defeated as much by cold weather as by the enemy. The U. S. suffered 90,000 cold injuries during World War II, at mean temperatures of only 25° to 30°F. If it ever becomes necessary to fight in the arctic or subarctic regions of the world, where temperatures can plunge to -70°F and remain at subzero levels for weeks or months, it is absolutely vital that our soldiers be equipped for those conditions. Only rigorous development and cold regions testing of materiel will assure that our nation has a capability to defend itself in the cold.



## LAMPS MARK III SEAHAWK HELICOPTERS

Air Test and Evaluation Squadron One is at-sea with two LAMPS Mark III SH-60B Seahawk helicopters executing the first phase of its operational test and evaluation of the new anti-submarine warfare weapons system.

A 24-member detachment led by LCdr Mike McNaull is evaluating RAST (Recovery Assist, Security and Traverse) system suitability aboard the USS McInerney (FFG-8) and taking a general look at the total Light Airborne Multi-Purpose System Mk III in an operational setting.

Upon conclusion of the first phase later this month, the second phase, or weapon system phase, is scheduled to

begin in October 1981. It will include operational assessments of the helicopter, airborne avionics, system software, shipboard electronics and shipboard support facilities for the ship-air system.

Headed by Cdr Tom Duncan, the VX-1 test team is divided into three specialized departments: operational test directors, analysts and tacticians. LCdr Bill Turville, LAMPS Mk III system operational test director, is assisted by Lt Steve Curlee, LAMPS Mk III ship operational test director; Lt Bucky Walters, air vehicle operational test director; and Lt Hugh Story, RAST operational test director. Other team members include analysts LCdrs Johnny



Burnham and Joe Haddock, computer specialist LCdr Dave Willmann, tactician Lt Curt Weaver and statistician Dr. Ken Glasser.

Preparation for the OPEVAL by VX-1 pilot and aircrew personnel was extensive. The pilot training syllabus was structured to satisfy requirements for flight in prototype aircraft. All pilots acting as Seahawk aircraft commanders completed 15 hours of flight training in the Army's Blackhawk helicopter and one month of groundschool at Ft. Rucker, Ala. Additionally, each pilot participated in Sikorsky Seahawk groundschool and flight training with Sikorsky test pilots. Their training also included IBM's tactical systems familiarization course, a one-week avionics-mission systems overview attended by all aircrew personnel.

Airborne Tactical Officer (ATO) training was conducted at IBM's Federal Systems Division in Owego, N.Y. The ATO syllabus included two weeks of intensive lecture and laboratory periods, followed by a one-week team training course. The team trainer allowed VX-1 aircrews and McInerney Combat Information Center personnel to conduct basic through advanced detection, localization, tracking and attack of computer-simulated submarine targets.

IBM's Sensor Operator (SO) training paralleled that of the ATO's; however, it was tailored to the intricacies of acoustic and non-acoustic sensor display and interpretation. SO training also included instruction on initialization and loading procedures for both onboard computers. Following one week of team training, sensor operators attended Sikorsky Seahawk airframe and systems ground-school.

VX-1 shipboard operator training was conducted at Patuxent's Mobile Ship Ground Station, a fully functional reproduction of the test-configured LAMPS Mk III shipboard electronics suite.

To enhance shipboard and aircrew training, the IBM LAMPS Interactive Tactical Tester (LITT) was incorporated into the MSGS. The LITT simulates a tactical ocean environment in which synthetic sonobuoys and targets are generated.

RAST training has been ongoing at NAEC Lakehurst, N.J., and aboard the McInerney. Lt Story participated in the first recovery assist landing board the McInerney in January 1981 and spent a month at sea with an NATC detachment conducting dynamic interface testing. VX-1 aircrew personnel trained using NAEC Lakehurst's operational mock-up of the FFG-7 flight deck, complete with RAST and lighting package, and deck landing qualifications aboard the McInerney.

VX-1 maintenance personnel, under the direction of LCdr Steve Beal and AFCM Larry McCullough, underwent extensive contractor training in all phases of aircraft systems and theory. Since June 1980, VX-1 personnel have been actively involved in Seahawk maintenance and training at NATC. In March 1980, VX-1 maintainers were instrumental in conducting the Navy's Maintenance Engineering Investigation (MEI) on the Seahawk. ("The Test er," Naval Air Test Center/Naval Air Station, Patuxent River, MD, Vol. XXXVIII, No. 23, June 19, 1981.)

## AIR FORCE TESTS SENSOR SECURITY SYSTEM

The Air Force is testing a newly-developed infrared sensor system to check its effectiveness in detecting attempted intrusions into military installations.

The system, which detects heat rather than light, was designed and built by RADC's solid state sciences division for ESD.

According to program manager Dick Taylor, the Air Force alone has more than 100 strategic and tactical installations that use intruder detection/assessment systems, most of which require high-powered lights. The infrared sensor is a promising candidate for replacing or augmenting sensors at these and other Department of Defense installations. Their operation could save substantial money and energy.

He explained, "We first tested the infrared system at Griffiss AFB during ordinary and snowy weather conditions. The van-mounted equipment, consisting of a sensor, optics and cooler in a package the size of a television camera, 'stared' at an open field of grass and gravel with a barbedwire security fence and a storage shed. In the background was an active runway and a heavily traveled road."

More than 146 intrusions into the area were attempted by people walking, running and crawling in different directions, but the sensor noted every attempt by flashing "target detected" on a display terminal in the van.

"We're now in the middle of a year's testing here at Hanscom," Taylor said. "The equipment is on a roof that overlooks an open grassy area and a road used by both cars and trucks. We're checking its performance in different types of situations involving people, vehicles and animals to see if it continues to detect at the same high rate as at Griffiss."

Meanwhile, RCA's advanced technology laboratory at Camden, New Jersey has begun delivery of five models containing all the system elements, including its computer, in a compact one-cubic-foot package. After each unit is checked by Taylor and his team of scientists, ESD's physical security systems directorate will test them singly and linked together as an extended system at its field site at Eglin AFB, Florida.

Following the tests, the directorate may contract for engineering development models. A decision is expected by the end of 1982.

ESD's physical security systems directorate is charged with a two-pronged mission: to acquire equipment for the security of worldwide Air Force resources--such as nuclear weapons, aircraft and special facilities--and to develop new exterior physical security systems for all DOD organizations. (Air Force Systems Command "Newsreview," Vol. XXV, No. 13, July 17, 1981.)



## ASSOCIATION AND CHAPTER NEWS

### ITEA BOARD OF DIRECTORS

Capitalizing on the attendance of a majority of Board members at the Southern Maryland Chapter symposium, members of the ITEA Board of Directors convened in Special Meeting on the afternoon of June 24, 1981. In addition to International officers of ITEA, were Board members Herrelko, Ivy, and Finkelstein. Special invited guests of the Board were Messrs. Terry Myron, Brad Granum and Tom Watts.

Terry Myron presented, at the request of the Board, a petition signed by fourteen ITEA members requesting recognition of the organization of an ITEA chapter, to be known as Tidewater Chapter, to serve the eastern portion of Virginia and the Northeastern portion of North Carolina. The Board unanimously voted to recognize the Tidewater Chapter as the third ITEA chapter and expressed its appreciation to Terry Myron on his fine organizing effort.

Other important actions included:

- Presentation by Brad Granum on proposed support for the ITEA Newsletter
- Reviewed a presentation by Tom Watts of J. Frank Raley Insurance Inc. on possible liability insurance coverage for ITEA events and publications
- Accepted the initial report of the Vice-President on nomination of candidates for Honorary member
- Discussed recommendations of the Nominating Committee for procedures to be used in the election of future Board members
- Received and accepted by voice vote the report of the Technical Committee Chairman
- Deferred other items for evaluation after integration into the revised by-laws for overall review and approval.



"Matt" Matthews accepts, on behalf of the Board, the organizational petition of Tidewater of ITEA, with congratulations to chapter organizer and new President Terry Myron.

In a final action of importance to all ITEA chapters, the Board voted to amend the by-laws as follows:

RESOLVED, upon motion duly made, seconded, and unanimously passed, that Article IV,

Paragraph 1 of the ITEA corporate By-Laws be revised to read

GENERAL POWERS: The business and affairs of the corporation shall be managed by its Board of Directors. The term 'Board of Directors' shall apply solely to the elected directors of the corporation and shall not be used in conjunction with or in reference to any other group, subgroup, committee, chapter, or gathering of members of the International Test and Evaluation Association. The Directors shall in all cases..." (no other change to the paragraph.)



Members of the ITEA Board of Directors meet at Patuxent River, Maryland. Attending are (left to right) Walt Finkelstein; Vice President Carl Cooper; Founder and President Dr. Allen Matthews; Secretary Bill Spurgeon; Dave Herrelko; and Web Ivy. Special Board guest Terry Myron is at far right.

### GEORGE WASHINGTON CHAPTER

The George Washington Chapter held a luncheon meeting on May 21, 1981, at the Arlington Hall Station Officer's Club. The Chapter was very fortunate to have Mr. W. Joseph Riegger, the NAVELEX T&E Coordinator, as its first speaker. Mr. Riegger gave an excellent overview of the test and evaluation required to support the acquisition process and some general insight into T&E philosophy. Of particular interest were his comments on forthcoming major changes both in the acquisition philosophy and the acquisition process itself as promulgated by the Deputy Secretary of Defense, Mr. Frank C. Carlucci. Although some of these changes may take some time to be implemented because they require the Office of Management and Budget or Congressional action....to be forewarned is to be forearmed!

At the Executive Board Meeting following the general meeting, three new directors were named:

- LTCOL Max Claiborne, U.S. Army
- Mr. Jerry Stahl, Department of the Army
- CAPT Bob Klementy, U.S. Navy.

There will be a dinner meeting on Thursday, August 20, 1981 at the Fort Myer Officer's Club. The Speaker is to be Mr. Charles Watt, Deputy Director, Test and Evaluation, Strategic, Naval and C<sup>3</sup>I Systems, Office of the Under Secretary of Defense for Research and Engineering. Mr. Watt's talk will be an overview of T&E from the Department of Defense R&E level.



**ITEA MEETINGS**

**T&E Process, Technology and Management**

Covering Exploratory, Developmental, Operational and Evaluation (September 1981). Exact date to be announced. The Southern Maryland Chapter of ITEA will hold a technical briefing on this subject. Details will be announced in a flyer.

**T&E Educational Workshop**

September 1981 (exact date to be announced). The George Washington Chapter of ITEA will hold a one-day seminar at Fort Belvoir, Virginia at the Defense Systems Management College. Topics to be covered are: (1) Overview of T&E Master Plan, (2) T&E and the Acquisition Process, and (3) T&E relative to DOD Directives 5000.1, 5000.2 and 5000.3. Detailed announcements will be sent to all ITEA members. Non-members are invited to attend, registration fees to be announced.

**The Universality of Flight Testing**

11-13 November 1981. ITEA has been invited to co-sponsor an AIAA Flight Testing Conference to be held at the Sahara Hotel, Las Vegas, Nevada near Nellis AFB with the theme of "The Universality of Flight Testing". ITEA accepted this invitation since we agree with the statement by the AIAA. "The AIAA considers that co-sponsorship of this conference with ITEA would be beneficial in achieving the basic objective of the conference which is to promote the interchange of flight test technology." ITEA will be a co-sponsor and publish the Call for Papers, mail conference announcements to the ITEA membership and possibly provide co-chairpersons and speakers. AIAA is the primary operator with responsibility for all arrangements and financial aspects of the conference. ITEA members will be able to register at a lower fee. Other co-sponsors are SAE, SFTE and SETP. Bill Cutler of Grumman Aerospace Corporation is the Technical Program Chairman and a member of ITEA. The advance program of session subjects is excellent and of interest to many ITEA members. The final and registration package program will be distributed to ITEA members. Contact the General Chairman, Mr. Luther J. Boyer, Vought Corporation, 2-59100, P.O. Box 225907, Dallas, Texas 75265 for special information.

**The Annual ITEA Technical/Educational Symposium**

Spring 1982, will be held in the Washington, D.C. area. The 1981 symposium was rescheduled for Spring 1982 due to meeting schedule conflicts and to provide longer lead-time. The Symposium Committee is working on arrangement details and the program of speakers. Members interested in serving on the Symposium Committee are invited to contact Franklyn P. Smith at (703) 281-6561 and offer their specialized services for the subcommittees listed below.

The ITEA Board of Directors elected Franklyn P. Smith, Vice President of the Washington, D.C. ITEA Chapter, to assume the duties of Associate Chairman for the National Symposium. He will be responsible for the direction and development of the three-day event. The initial steps in forming the essential subcommittees are underway. The subcommittee chairpersons will form an operating committee which will recommend the theme for the Symposium to the National Association's Board of Directors. Many questions will be resolved over the next few months by the operating committee as to the exact location, dates, program outline, registration, publicity, principal guests and speakers, classification of technical presentations, and accommodations.

The subcommittees currently being formed are:

- Registration
- Finance
- Secretariat
- Publicity
- Exploitation
- Program
- Reception
- Entertainment
- Security

This is our first national symposium and it will be held at the seat of the national government. The officials in government, other associations and their membership, and our friends from other countries will be watching how well we do. Our future rests on our professional approach. If you are interested in helping on the subcommittee, please contact Frank Smith at 366 Park Street, N.E., Vienna, Virginia 22180 or call (703) 281-6561.





## CALENDAR

### TECHNICAL MEETINGS

#### Electronic Test and Measurement Conference

October 5-8, 1981 at the Hyatt Regency, Chicago, Illinois. Conference and Exhibition devoted exclusively to test instrumentation and ATE technology. Papers will address these problems in test technology and management: (1) Evaluating ATE, (2) Using Test Instruments Effectively, (3) Tradeoffs in Component Test Technology and (4) Effective Management of Test Resources. Call (617) 232-5470.

#### Tenth Biennial Guidance Test Symposium

October, 7-9, 1981 at the Central Inertial Guidance Test Facility at Holloman AFB, New Mexico 88330. Provides a forum on Guidance and Control Systems to interchange the latest advances and to discuss future requirements for the Test and Evaluation (T&E) of such systems. Attendance is by invitation and will be extended to qualified personnel from industry, academia, and government organizations. May include foreign material scientists and engineers. Papers solicited. Contact Symposium Manager, Mr. G. Mozer, Holloman AFB, AV 349-2123 or (505) 679-2123 or (505) 479-6511 Ext. 5-2123.

#### Eighteenth Annual DOD/AOC Electronic Warfare Technical Symposium

October 13-15, 1981 at Andrews AFB, Maryland with classified exhibits. Will include NATO countries and speakers. Theme is "Restoring the Balance of Power," SECRET. Contact AOC Convention, 2300 South 9th

Street, #300-A, Arlington, Virginia 22204. Ken O'Neil is Chairman, (703) 553-6340.

#### AIAA First Flight Testing Conference

November 11-13, 1981 in the Sahara Hotel, Las Vegas. Unclassified session topics of: (1) Flight Test Program Overviews, (2) Management of Test Programs, (3) Test Range Status, (4) Flight Test Methods, (5) Instrumentation, (6) Subsystem Testing, (7) Data Systems, (8) Comparison with Ground Testing, and (9) Pre- and Post-Flight analysis. In conjunction with related T&E professional societies or committees of SETP, SFTE, SAE, and ITEA.

#### Seventeenth Meeting of the Computer Performance Evaluation Users Group

November 16-19, 1981; San Antonio, Texas. Sponsored by National Bureau of Standards and U.S. Department of Commerce. Hosted by Headquarters, Air Training Command, Department of the Air Force. Purpose is to promote the economic and effective utilization and procurement of Federal ADP resources. Abstracts and formal papers to Thomas Wyrick; Department of the Air Force; FEDSIM/NA; Washington, D.C. 20330; (703) 274-7910. Tutorials and case studies to Carol B. Wilson, Fiscal Associates, Inc., 5911 Edsall Road, Suite 1213, Alexandria, Virginia 22304; (703) 370-6361. Papers solicited to the theme of "Increased Organizational Productivity: Increasing DP Service and Quality while Minimizing DP Cost."

### NEW MEMBERS DUES FOR BALANCE OF 1981

Effective 1 August 1981, new members dues are one half price for the remainder of 1981. The specific amounts are:

Civilian, Government, or Private Sector	\$12.50
Military Active Duty	\$7.50

This benefit is intended to encourage new memberships with an equitable fee for the remainder of the year and will help to support ITEA activities during the following calendar year.

MEMBERS ARE REQUESTED TO VOLUNTARILY SUBMIT 1982 DUES BY DECEMBER 31, 1981 FOR TAX DEDUCTION, BUT NOT LATER THAN JANUARY 31, 1982. Compliance will save voluntary labor and service costs for billing. Members delinquent in paying dues will be carried for one year before being dropped from the mailing list. It has been proposed that an "initiation" fee be established and require repayment after a lapse of one year. Over 90 percent of members automatically renew without billing.

### ITEA DECALS AVAILABLE

An order for ITEA decals has been initiated by Headquarters. These decals will be three inches in diameter, five color on vinyl, and are identical in size and coloring to the ITEA logo appearing on the deluxe 11 x 14 membership certificates soon to be distributed.

A limited number of these truly beautiful decals are available for purchase by members. They can be used in any number of ways, including attachment to luggage or briefcase for instant recognition in the airport baggage claim area. Decals are sold in quantities of six (6) for three dollars. This price includes the price of the decal, handling, and allows the Headquarters to make a small profit for the general operating fund.

Please make your check payable to ITEA in the correct amount and send to:

ITEA DECAL  
P.O. Box 203  
Patuxent River, MD 20670

This special handling has been arranged to relieve our very busy Headquarters office from the extra burden of processing decal orders. All orders will be processed promptly and decals will be mailed as soon as they are delivered by the manufacturer.



CORRECTIONS TO APRIL 1981 NEWSLETTER

1. Front Page shows Vol. III,  
should be Vol. II.
2. Page 30, Item (5), Line 7;  
Fort Greely, Arkansas, should  
be Alaska.
3. Other Miscellaneous typographical  
errors.

The editor apologizes for these  
and any slips that occur in  
finalizing the printers copy.

We are pleased to now have the  
part-time assistance of professional  
editors.

*Man*



CALENDAR

TECHNICAL MEETING



OFFICE OF THE UNDER SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

29 July 1981

RESEARCH AND  
ENGINEERING

Dr. Allen R. Matthews  
International Test & Evaluation Association  
P. O. Box 603  
Lexington Park, MD 20653

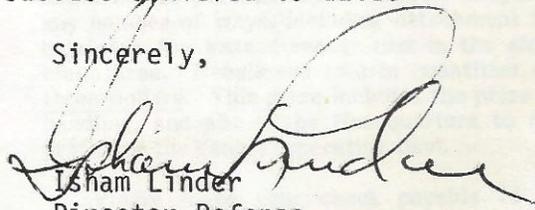
Dear Dr. Matthews:

I am pleased to accept the ITEA Board of Director's invitation to become an honorary member of their organization. You will find the signed membership application attached to this correspondence.

I have been favorably impressed by the success achieved by your organization in its past endeavors and it is clear from your recent newsletter that ITEA's future plans are no less ambitious. There is no doubt in my mind that a maturing organization like ITEA can accomplish a great deal toward promoting the goals of the DoD Test and Evaluation community.

Again, I thank you for the honor extended me and I trust you and the ITEA Board of Directors will continue to provide the professional leadership which has brought you the success achieved to date.

Sincerely,



Isham Linder  
Director Defense  
Test and Evaluation

Attachment





MEMBERSHIP SURVEY--PLEASE CHECK ALL BOXES THAT APPLY

I. TECHNICAL SPECIALTIES

II. OTHER SPECIALTIES

- Engineering
- Electrical
- Electronic
- Mechanical
- Aeronautical
- Astronautical
- Propulsion
- Industrial
- Human Factors
- Computer Systems
- Hardware
- Software
- Systems
- IV&V
- Simulation
- Ops. Research/Systems Analysis
- Systems Design
- Flight Test Engineer
- Test Pilot
- Ships & Ship Systems
- Undersea Warfare
- Electronic Warfare
- Unmanned Vehicles
- Aviation
- Flight Ops.
- Vertical Flight
- Avionics
- Sensor Systems
- Medicine
- Mission Systems
- Test Facilities
- Measures of Effectiveness
- Signal Processing
- C-Cubed
- Physics
- Munitions
- Chem/Bio/Nuke Warfare
- Environmental
- Survivability
- Intelligence
- Logistics
- Depot Rework T&E
- At Sea Ops
- Production
- Commercial Mf'g
- Ship Building
- QA
- R/M/A
- Space Systems
- Safety
- Systems Safety
- Range Officer/Eng'r
- Instrumentation
- Data Reduction/Analysis
- ATE
- Sensors
- CT&E
- DT&E
- OT&E
- JT&E
- Cost Effectiveness
- LCC/DTC
- Many on Many T&E
- Integrated Systems T&E

- Policy
- Procedures
- Planning
- Test Development
- Budget/Controllershship
- Systems Acquisition
- Program Management
- Mgt. Info. Systems
- Manufacturing
- Marketing
- Data Base Management
- Organizational Development
- Education
- Consultant
- Training
- \_\_\_\_\_
- \_\_\_\_\_

III. I CAN HELP WITH:

- Symposium
- Publication Committee
- Publicity Committee
- Membership Committee
- International Committee
- Starting Local Chapter
- Contributing to Newsletter
- Speaking at a Meeting
- \_\_\_\_\_
- \_\_\_\_\_
- Details \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

IV. COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

V. HERE ARE SOME ITEA MEMBERSHIP PROSPECTS. PLEASE SEND THEM A NEWSLETTER AND A MEMBERSHIP APPLICATION FORM.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

YOU MAY/MAY NOT (CIRCLE ONE) TELL THEM I RECOMMENDED THEM TO ITEA.



## TIDEWATER CHAPTER

**Tidewater Chapter**  
P.O. Box 13181  
Chesapeake, VA 23325

**President:** Terry Myron  
**Vice President:** Jim Duff  
**Secretary:** Dick Kasten  
**Treasurer:** Ed Sierra

On June 15, 1981, the Tidewater Chapter of ITEA was born and officers listed above were elected. In addition to election of chapter officers, four primary committees were established:

- Executive - consists of the four elected chapter officers plus chairmen of the By-Laws, Membership (2 members), and Planning Committees as well as a Member at-Large
- By-Laws - Norm Anderson, Chairman
- Membership - Jack Devlin, Chairman; Dave Fisher; and Jim Duff
- Planning - Cliff Van Dersip, Chairman; Dick Kasten; and Bill Breed.

In addition to the ITEA general purpose, the new chapter will promote and recognize the high degree of professionalism that exists within the T&E community. The new chapter is looking for members from all sectors of industry who share the belief that test and evaluation is a vital prerequisite in the production of quality products that will permit continued pre-eminence and competitiveness in international economic markets.

The first scheduled general membership meeting of the Tidewater Chapter of ITEA was held at the Little Creek Officer's Club on Tuesday, July 14, 1981 at noon. Members and guests enjoyed a buffet lunch at which ITEA President "Matt" Matthews conferred an honorary ITEA membership on Rear Admiral Robert H. Blount, Commander, Operational Test and Evaluation Force (COMOPTEVFOR), in recognition of his experience and contribution to test and evaluation during the Navy acquisition process. COMOPTEVFOR headquarters is in Norfolk, Virginia with subordinate headquarters located in San Diego and VX aircraft squadrons located at various locations throughout the United States.



RADM Blount delivered a thought-provoking discourse on the Test and Evaluation (T&E) chain comprised of the varied types of T&E required from product requirement, through concept, development, and production phases. The test phases must perform their separate function, fulfill separate needs and be properly understood by more persons in the acquisition cycle. An example was the common misconception in Washington that OPEVAL was an extension of TECHEVAL rather than a separate event charged with answering separate questions.

According to the Admiral, there exists a wide range of development testing effectiveness. NAVAIR received high marks for their testing programs. Simulation was recommended to ITEA by Admiral Blount as a test medium to be closely examined because in the separate testing areas simulation might be either an excellent and necessary tool or a bad and misleading tool. The decision to use simulation in a test phase could well be aided by ITEA.

Admiral Blount urged the development of common sense meaningful measures in testing (e.g. the same MTBF goals used for aircraft radar with operational requirements for two hour flights would not make sense if applied to submarine sensors with two month patrol requirements). Analytical use of statistics and confidence levels were recommended as points for ITEA consideration and promotion. The track record of design-to-price projects has been less than satisfactory in meeting initial operational requirements for which they were developed according to the Admiral. Another important recommendation to ITEA was the development of commonality of terms among the several T&E communities.

There were 32 individuals at the July meeting. The chapter has enrolled 24 members (as of July 14th) and more are expected from industry and the military.

Chapter organization meeting on June 15. (Left to right) Norm Anderson, By-Laws Committee Chairman; Jim Duff, Chapter Vice President; Dick Kasten, Chapter Secretary; Cliff Van Dersip, Planning Committee Chairman; Terry Myron, Chapter President; and Matt Matthews, ITEA President.



## COMMITTEE REPORTS

### Membership Committee News

Response to the recent call for ITEA members to join the Membership has been moderate. We can use all the brains, hands and ideas we can get, as well as "leads" to members of the test and evaluation community whom you'd like to hear about ITEA.

#### Committee Members:

David A. Herrelko	Chairman
James B. Duff	Tidewater Chapter
Simon B. Labe	George Washington Chapter
Walter F. Beverly, III	Southern Maryland Chapter
Fred K. McCoy	Member-at-Large

Send us your ideas, as well as any likely pockets of T&E folks who might like to learn about ITEA!

### By-Laws Committee News

Your By-Laws Committee members are addressing some of the most interesting and important issues requiring resolution by our Association. As you know, ITEA has an official by-laws document. Those of us who are members of chapter organizations were required to acknowledge and accept those by-laws as a precondition of chapter recognition by the ITEA Board of Directors. Why, then, have a by-laws committee and what exactly is this committee doing for ITEA?

Glad you asked! The existing by-laws of ITEA form a remarkable document. Prepared at the birth of the Association, those fundamental rules established by ITEA founders Matthews, McLaurin and Klimek have served our

organization through infancy and early adolescence. To date, the by-laws have been subject to modification by a majority vote of the Board as situations arose which demanded immediate action. There are several areas which require additional definition. To avoid a piecemeal approach to making changes, the Board authorized the formation of a committee to undertake a thorough and comprehensive review not only of the by-laws themselves, but the structure of the by-laws document as well. The purpose, of course, is the preparation of a compact instrument which best serves ITEA in the present and which will be the type of dynamic document best suited to future needs of the Association. The review requested by the Board is now underway.

Our committee expects to have a "strawman" of proposed changes to the by-laws in August 1981. That early review document will be subject to editing by committee members before it is brought before the full committee informal session for discussion and final action. Hopefully, the committee will complete work prior to the next scheduled meeting of the Board and the new revised by-laws may be presented at that time.

Want to help? The committee members welcome any assistance from members at large. If you have an opinion on the by-laws, want to offer an idea, or especially if you are associated with an established organization from which we can draw ideas or inspiration, please contact one of the committee members listed below. We look forward to hearing from you.

#### Committee Members:

Bill Spurgeon	Chairman
Walt Finkelstein	Member
Dave Herrelko	Member

## MEMBERSHIP CERTIFICATES

The Association is obtaining deluxe membership certificates for Charter, Founder, Honorary, and Corporate Members. The certificates are 11 x 14 inches (standard picture frame size) with colored logo, gold corporate seal and the member's name.

Members' names will be entered as first, middle initial, and last name per ITEA records. Corporate certificates will bear the name of the corporation. Titles and professional grades which are subject to change will not be entered. Distribution is planned for early fall: direct mailing to individual members at large and through chapter presidents to chapter members.

Reminder: Charter Membership is available only to the closing of the 1982 International Symposium.

## COST CRISIS

ITEA has been very successful during the first operational year.

Members' dues and donations have sponsored all initial start-up and routine operating costs supplemented by voluntary labor and material contributions by the officers and staff with in-kind help from at least three contractors. However, these assets are inadequate to continue publishing this newsletter without a major reduction in contents and frequency of publication.

Additional sources of revenue are needed immediately in order to publish the planned October issue. Members and interested parties are therefore requested to establish contacts and obtain both corporate memberships and advertising for the next issue. Rates and increased benefits are published in this issue.



## A SOLUTION TO COMPLEX SYSTEM DEVELOPMENT PROGRAM COST AND SCHEDULE OVERRUNS

Presently, almost all complex system development programs have significant cost and schedule overruns. Part of this is caused by cost and schedule estimates due to optimism, ignorance and a desire to sell the program. The largest part of these overruns occur because the customer (usually the Government) has little or no leverage after the development contract is signed with a single contractor. When the contractor states that more time and funds are needed there is little the customer can do except provide the time and funds, reduce the scope of the program or cancel it.

Experience shows that during procurement of missile and rocket systems, second source contractors significantly reduce the hardware cost. This is one example of competition providing the Army leverage.

U.S. Army missile and rocket development programs are usually divided into two phases: Validation and Full Scale Engineering Development. A third phase is called Production and Deployment. Recently, the Army has had two competing contractors and systems during the Validation Phase on some system development programs. This has proven to be very successful because the Army has leverage as long as there are competing contractors and systems. However, when one contractor with one system is selected for the Full Scale Engineering Development Phase, the usual cost and schedule overruns occur.

The solution to complex system development program cost and schedule overruns is to have competing contractors and systems during the Validation and Full Scale Engineering Development Phases. At the end of the Full Scale Engineering Development Phase, one system would be selected for procurement. The contractor whose system is not selected for procurement would become the second source contractor. This solution would increase the research and development costs but not significantly because cost and schedule overruns could be reduced or eliminated. More reliable hardware should also result from this solution which will reduce the operation and maintenance costs. Competing contractors and systems may increase the required research and development funds but the life-cycle costs should be reduced. This approach also gives the customer leverage in the customer and contractor relationship.

Karl Bissinger #C124RM  
803 Grayeroft Drive  
Huntsville, AL 35802



## PERSONALITY - DR. ALLEN R. MATTHEWS

In everyone's career there comes a time to do what a man really feels is essential for service to his nation. Dr. "Matt" Matthews is no exception. He has voluntarily taken a one year opportunity to found and lead ITEA as a new and needed professional society. You can be sure "Matt" is a happy man who enjoys the success of ITEA as well as challenging work contributing to other professional societies. As a consultant, lecturer and author he solves technical problems or builds organizations. His career background is of particular interest due to the depth and breadth of his qualifications.

"Matt" is from the West Coast but has lived throughout the U.S. and overseas. Born August 23, 1918 in Walla Walla, Washington, he was named after his Uncle Allen who was killed during air combat in France during WWI. He is listed in several Who's Who published by the American Association of Engineering, Engineers Joint Council, Marquis (Government) and professional society registers.

He has a PhD in Electronics from Stanford University, (1956); Engineering Degree, Stanford, (1952); MSEE, Stanford, (1951); and BSEE, Washington State University, (1940). He has completed the U.S. Air Force War College (1968-70) and the Command and Staff Course (1963-68), in addition to the one year Westinghouse Graduate School (1940-41). He is a member of AIAA, IEEE, AOC, ADPA, Sigma Xi, Tau Beta Pi, Alpha Tau Omega, ION, BEMS, ITEA, Rotary, A/N Club, Washington Engineers Club and others.

His publications include a number of professional papers, technical and management reports, planning studies, and texts on microwave devices and laboratory experiments, intercept receivers, traveling wave tubes, test and evaluation, research and development and facilities. His basic specialties are system design, independent R&D, EW, C<sup>3</sup>, E<sup>3</sup>, radomes, antennas, radars and numerous related fields.

Dr. Matthews' career has spanned over forty years in:

- **Federal Civil Service.** Ten years involving many technical areas of aircraft systems, sub-systems and components testing as well as organizational management and planning at the GS 15/16 level.

- **Industry.** Fifteen years involving increasing responsibilities with five major corporations including R&D at the levels of Director of Research and Engineering, Program Manager, Manager of Advanced Development and Director of Program Development.

- **Military.** Sixteen years, including duty in the Royal Air Force as a radar officer; radar fighter control for defense during amphibious landings at Saipan, Leyte and Iwo Jima; world wide standardization of Ground Control Approach (GCA) radar installations, technical modification, operating procedures for Strategic Air Command (SAC), and GCA training for Navy and foreign officers; professor of graduate courses in electronics at AFIT; and R&D officer involving the four major Air Force centers on electronic R&D for research, sub-systems and systems.

Matt has also lectured at university short courses, Test Pilot School, and other short courses while consulting on systems like AWACS and tri-service tests like EW/CAS. He is currently revising his texts on the fundamentals of T&E, WWII Radar and Electronic Warfare (EW), and a novel about AWACS deployment. He has been the Technical Program Chairman of two international DOD/AOC EW symposia and lectures on T&E as well as R&D. His current activity is President of MATTCON, Inc. and ITEA.





## HONORARY MEMBERS

In addition to the three honorary members announced on in the April 1981 Newsletter, the Board has carefully selected additional honorary memberships for:

- **Rear Admiral Fred H. Baughman, USN**  
Commander  
Pacific Missile Test Center  
Point Mugu, California 93042
- **Rear Admiral Robert H. Blount, USN**  
Commander  
Operational Test and Evaluation Force  
Norfolk, Virginia 23511
- **Brigadier General Jerry M. Bunyard, USA**  
Patriot Air Defense Missile System  
DARCOM  
Redstone Arsenal, Alabama 35898
- **Major General Robert L. Kirwan, USA**  
CG, USA Operational Test and Evaluation Agency  
5600 Columbia Pike  
Falls Church, Virginia 22041
- **Lieutenant General Howard W. Leaf, USAF**  
The Inspector General  
HQ USAF/IG  
Pentagon Room 4E1076  
Washington, D. C. 20330
- **Rear Admiral Isham W. Linder, USN (Ret)**  
Office Under Secretary of Defense (T&E)  
Pentagon Room 3E1060  
Washington, D. C. 20301
- **Colonel R. L. Murray**  
Director, U.S. Marine Corps  
Operational Test and Evaluation Activity  
Marine Corps Development and Education Center  
Quantico, Virginia 22134
- **Lieutenant General Alfred D. Starbird, USA (Ret)**  
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- **Major General W. E. Whitlach, USAF**  
Commander  
Air Force Test and Evaluation Center  
Kirtland AFB, New Mexico 87117
- **Rear Admiral John G. Wissler, USN**  
Commander  
Naval Air Test Center  
Patuxent River, Maryland 20670

The above list represents 5 percent of the membership as of August 1981 and will also be expanded to include outstanding leaders of T&E from industry and academia. The Board is considering a limit of 5 percent of membership with a possible ceiling limit as the membership expands.

## AWARDS

A series of awards have been announced by the Institute of Environmental Sciences.

**J. Howard Kittel**, Argonne National Laboratories, and **Ralph P. Cingo**, Rockwell International were co-recipients of the Maurice Simpson Technical Editors' Award for the Journal of Environment Sciences. Mr. Kittel's paper, "The Status of Nuclear Waste Management," was published in the September/October 1980 issue of the Journal and Mr. Cingo's paper, "Water Energy Conversion - Is It Environmentally Acceptable," was published in the November/December 1980 issue of the Journal.

**John D. Campbell**, Perkin Elmer Corporation, was presented the President's Award "for management level support of Institute of Environmental Sciences" Activities for more than 15 years and especially for contributions to the success of all Space Simulation Research."

**William E. Wallace**, Naval Electronic Systems Command, was presented the Reliability Test and Evaluation Award "for outstanding contributions to the advancement

of environmental reliability testing and hardware reliability associated with direction in the development of MIL-STD-781C and MIL-STD-781D."

**Robert Geminder**, Director, Engineering Operations, Energy and Environment Division, System Development Corporation, was presented the IES Monroe Seligman Award "for his outstanding service and contributions to the IES as National President and in preparing the Five Year Plan."

**Claude P. Benedix**, Lawrence Livermore Laboratories, was presented the Willis J. Whitfield Award "in recognition of the best IES technical paper in the areas of Contamination Control published during 1980, 'Development of Construction Specifications to Attain Clean Rooms for the Nova Laser Facility.'"

**Henry N. Luhrs**, TRW Systems, was presented the Irwin Vigness Award "for significant clarification in the field of Pyrotechnic Shock Testing as summarized in his report 'Shock Test Techniques and Design Impact.'"



### AIR FORCE ROME AIR DEVELOPMENT CENTER (RADC) TARGET DETECTION TESTS

Flight tests have been completed at RADC in connection with the high resolution target detection program. The program's goal is to determine the effectiveness of narrow-bandwidth signals versus wide-bandwidth signals in detecting targets.

RADC had previously studied the statistical properties of wide-band and narrow-band bandwidths and their relationship in the detection of targets while minimizing radar cost. The studies revealed an optimum wide and narrow signal bandwidth that will maximize detectability of targets. They also indicated that use of several significantly narrower bandwidth channels yielded acceptable detection performance.

Because wide-band signal processing is far more costly in hardware to implement than processing in narrow-bands, it was decided to validate the study conclusions with experimental measurements of aircraft targets using radar equipment with the required signal bandwidth. RADC's Signal Processing Laboratory - unique among Air Force Laboratories - was chosen for the tests. This completely computer controlled laboratory has the capability of emulating a very large number of radars by keyboard inputs to its programmable hardware.

Performance Compared. The tests involved comparing the detection performance of two particular radar waveforms - one wide-band and the other narrow-band. Preliminary data analysis indicates the theoretical results of the study efforts are correct, and cost-saving can be achieved by using the narrow-band approach. (Courtesy of the AFSC Newsreview, June 26, 1981)

### MICROANALYSIS LAB ASSURES RELIABILITY

If averting failure is the key to success, the Air Force can be thankful there's an Electron Beam Microanalysis Laboratory at RADC. In testing devices already being used in Air Force systems or about to be incorporated into new systems, the laboratory employs very sophisticated equipment and emerging microcircuit technologies to assess potential reliability problems.

Techniques Refined. "We are constantly striving to develop new techniques for conducting failure analysis," reports Captain Martin Walter, a project engineer. "And we're very concerned about how reliable a given microcircuit device is and will be."

The lab-part of RADC's Reliability and Compatibility Division boasts a Scanning Electron Microscope (SEM). The SEM is an analytical instrument that uses a finely focused beam of electrons. It is employed to determine the structural and chemical properties of a microcircuit.

This structural information is obtained from electrons emanating from the sample microcircuit when it is struck by the SEM electron beam. These emitted electrons are made visible on a Cathode-Ray Tube (CRT) similar to a small-screen television set.

X-Rays Used. The chemical data is received from the characteristic X-rays emitted from the sample. Structural aspects could include scratches on the microcircuit, melting of the item or a flaw in the manufacturing process. Chemical aspects involve contaminating substances that don't belong in the circuit.

"We can use either the CRT or a paper-chart recorder to analyze the microcircuits," reports Captain Walter. "The chart recorder is similar to the printout of an electrocardiogram or polygraph (lie detector)." (Courtesy of the AFSC Newsreview, June 26, 1981)

### COMPUTERS TEST CRUISE MISSILES IN NEW YORK

A new generation of electronic computers to test air-launched cruise missiles has been delivered to the 416th Bombardment Wing at Griffiss AFB, NY. The computer system will be used by missile maintenance specialists to test guidance and control systems of the new ALCM and short-range attack missile. The SRAM-equipped wing received its first ALCM in January. The computer system will also test B-52G Stratofortress missile-launching systems. Conversion of the wing into the first Air Force ALCM unit will be completed with delivery of 215 ALCMs and fitting of its B-52G bombers with new offensive avionics systems. (Courtesy of the Captial Flyer, Andrews AFB, D.C., 11 July 1981)

### INERTIAL TEST EQUIPMENT IS INSTALLED AT AD Eglin AFB, Fla.

AD's 6585th Test Group, Holloman AFB, N.M., has installed a seismically stable platform (SSP) in its Advanced Inertial Test Laboratory.

After preliminary acceptance testing, the SSP will undergo performance tests measuring its ability to isolate test instruments from earth vibrations. If the tests succeed, the SSP will pave the way for a new phase of high-precision inertial testing.

The platform was designed, built and installed under a contract with Measurement Analysis Corp., Los Angeles. (Air Force Systems Command "Newsreview," Vol. XXV, No. 7, May 15, 1981.)



### FLIGHT TESTS STAGED ON TERMINAL SENSOR

Wright-Patterson AFB, Ohio

ASD's 4950th Test Wing has completed flight-testing a range-only correlation system (ROCS)—an advanced terminal sensor that may improve the accuracy of inertial guidance systems for future ballistic missiles.

Purpose of the 11-month test program was to gather flight-test data over various terrains through seasonal variations and under varying weather conditions.

#### 44 Flights Logged

Wing pilots flew the system for 44 flights covering 263 hours. AC-141 long-range transport aircraft served as the test bed.

Areas overflown were Rome and Ava, N.Y.; Sidney and Wapakoneta, Ohio; Rogers City, Mich; and Elgin, Neb.

The project is managed under the advanced ballistic re-entry system program at BMO, Norton AFB, Calif.

#### Guidance Concept

ROCS, developed by Goodyear Aerospace Corp., Akron, Ohio, involves a terminal guidance sensor concept.

These test flights demonstrated the feasibility of the new system in early states of development before expensive miniaturization is begun. (Air Force Systems Command "Newsreview," Vol. XXV, No. 11, June 12, 1981.)

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### ARMY ADDS VERIFICATION SYSTEMS

Griffiss AFB, N.Y.

The Army has joined the list of Defense Department agencies using one of RADC's automated verification systems (AVSs).

These systems have been developed to analyze JOVIAL (Joule's own version of the international algebraic language) and FORTRAN (formula translation) computer programs. USAF uses both the JOVIAL and FORTRAN programming languages in the development of weapon systems.

The Army will employ the JOVIAL AVS to support testing and maintenance of computer programs written in the JOVIAL language.

Current RADC research and development efforts in this area are directed toward more advanced technology. (Air Force Systems Command "Newsreview," Vol. XXV, No. 11, June 12, 1981.)

### MICROCIRCUIT TESTING IS COMPLEX JOB

Griffiss AFB, N.Y.

If you don't believe life has become a lot more complex in recent years, check with the people at RADC's Microcircuit Test Facility.

The facility is a completely automated, computer-controlled microcircuit testing system, capable of performing electrical measurements at the high speeds compatible with modern integrated electronics.

#### Sophistication Added

"The state of the art in microcircuits," confirms John Haberer, the facility's project engineer, "is such that we can put thousands of transistors into a space one transistor occupied 15 years ago. This process requires much more sophisticated testing."

Haberer reports that "today there are thousands of interconnected transistors in an integrated circuit. These devices perform very complex electronic functions."

"Our job at the center is to determine whether these complex integrated circuits function properly and can be used in high-reliability government electronic equipment."

#### Test Station Vital

Heart of the system is the test station, where microcircuits are interconnected with the electronic circuits used for testing.

Haberer notes that "we also have a mini-environmental chamber—first of its kind—built to RADC's specification."

This chamber is placed over the device to be tested, and allows all electrical testing to be performed as the temperature is changed. Changes are under program control, and cover the full military temperature range from minus 55 to plus 125 degrees centigrade.

RADC's job in microcircuit testing is twofold—to develop and implement proper tests to confirm they are electrically functioning, and to determine when failures might occur.

#### Support Promised

"Whenever government agencies experience test-related problems, we can support them," declares Haberer. "We have often prevented program schedule slippage and cost overruns related to contractor and microcircuit supplier testing problems."

Programs for the facility are developed mostly in-house at RADC. They are written in a high-level computer language that minimizes the training of new personnel. (Air Force Systems Command "Newsreview," Vol. XXV, No. 11, June 12, 1981.)



## T&E EVENTS

### DIGITAL WEAPONS DELIVERY SYSTEMS TEST COMPLETE Eglin AFB, Fla.

AD's 3246th Test Wing, seeking methods to help Air Force combat aircrews locate enemy targets in poor visibility, has completed testing of two such systems.

These systems are an onboard digital navigational and weapons delivery system (AN/ARN-101) and the AN/AVQ-26 Pave Tack—a day/night (electro-optical) target identification and laser designation system.

#### Operations Enhanced

Integration of the systems will greatly enhance weapons delivery and reconnaissance target acquisition from F-4 fighter aircraft, some of which were used in the test.

In its navigational mode, the AN/ARN-101 provides precise navigation to and from the target area. Target coordinates can be programmed into its computer, and the system will provide steering information to one or more targets.

In the weapons delivery mode, precise navigational and steering functions allow accurate reconnaissance target acquisitions and weapons delivery. (Air Force Systems Command "Newsreview," Vol. XXV, No. 7, May 15, 1981.)

### HUMAN PERFORMANCE DATA AIDS SYSTEMS DESIGNERS Wright-Patterson AFB, Ohio

More than 40 Tri-Service/University experts in perception and human performance from the United States, Canada, and Great Britain recently participated in a workshop on Integrated Perceptual Information for Designers.

Dr. Kenneth R. Boff of the Human Engineering Division, AMRL, is technical director for the program which was sponsored by AMRL's Human Resources Laboratory; ASD's Deputy for Simulators and the Simulation Division of the Directorate of Equipment Engineering; Army Research Institute; Army Human Engineering Laboratory, and the Naval Training Equipment Center.

#### Data for Designers

Data from the workshop can be used by designers of advanced simulator displays and controls and displays for operational aircraft.

As a result of the workshop a handbook on perception and human performance will be produced and made available to systems designers and engineers.

A human engineering data base containing all functions, models and illustrations will also serve as an effective resource to design engineers, plus a service of user's guides will also be made available. (Air Force Systems Command "Newsreview," Vol. XXV, No. 7, May 15, 1981.)

### B-52Gs BEGIN STRAKELET TESTS Edwards AFB, Calif.

The first B-52G bomber to be modified with strakelets was recently delivered to AFFTC by the Boeing Military Airplane Company for what is expected to be an 11 flight test program.

#### Used for Identification

Strakelets are distinctive fairings added to the leading edge of the wing root. The strakelets allow aircraft capable of carrying ALCMs to be readily identified by national technical means in compliance with provisions of SALT II.

#### Cools Power Unit

The new design incorporates an air inlet that directs cooling air to a new DC power unit installed as part of the ongoing \$5 million B-52 modernization program. (Air Force Systems Command "Newsreview," Vol. XXV, No. 7, May 15, 1981.)

### AIRFOIL TESTS INDICATE VAST KC-135 FUEL SAVINGS Edwards AFB, Calif.

Data compiled during joint AFFTC/NASA testing of KC-135 aircraft equipped with new airfoil devices show that transport aircraft performance could possibly be improved by as much as five to seven percent.

The new airfoil devices, called winglets, are vertical wing extensions measuring about nine feet in height and weigh about 150 pounds each. The KC-135 was chosen as the test aircraft because its wings could be easily modified and are of a design and sufficient size that data resulting from the program can be applied to current and future transport-class planes.

This program involved a 173-hour, 39-flight testing program. Flying qualities of the four-engine aircraft were basically unaltered, and test results were in close agreement with preliminary analyses and wind tunnel tests.

The adjustable winglets, built and instrumented by Boeing Military Airplane Co., were tested in three positions.

Boeing is analyzing the performance data accumulated during tests conducted at NASA's Dryden Flight Research Center. Final results are expected in June.

The Air Force is using the preliminary data now in its decision-making process regarding a fleet retrofit program.

The annual fuel savings to the Air Force if the KC-135 fleet were fitted with winglets would be about 24 million gallons. (Air Force Systems Command "Newsreview," Vol. XXV, No. 7, May 15, 1981.)



## TOPO LAB HITS ROAD

Col. Daniel L. Lyeon, commander and director of the U.S. Army Engineer Topographic Laboratories, Ft. Belvoir, Va., announced that an experimental prototype automated terrain analysis system will be demonstrated at several Army posts throughout the United States. For reasons of expediency the Field Exploitation of Elevation Data (FEED) system is housed in a camouflage-painted Winnebago recreation vehicle, but the contents are off-the-shelf military standard ruggedized computation equipment.

Instead of the usual wet bar and stereo components, this Winnebago is equipped with military standard minicomputers engineered to withstand the variable temperatures and hard knocks of mobile military operations. Instead of a television, the van contains a glowing green tinted screen that could show a combat unit commander how the battlefield looks from the air, from an allied command post, or even from an enemy observation post.

Displayed on the screen as the soldier operator enters instructions on the keyboard, these computer graphics could help the commander not only to "see" the battlefield, but to study three-dimensional "pictures" of the terrain in ways that are not possible using a conventional map. The system can also produce "hard copies."

"FEED" stands for Field Exploitation of Elevation Data, which simply means storing a model of the Earth's surface in a computer data base compact and rugged enough for battlefield use. FEED is only one part of ETL's current research and development of automated terrain analysis. One purpose of demonstrating the FEED system is to familiarize professional soldiers from different combat arms with the types of combat graphics that can be produced with existing technology. Demonstrations will give potential users of future fieldable automated terrain analysis systems an opportunity to contribute new ideas on practical uses for such systems, both short-range and long-range.

The demonstration plan calls for a soldier from the post being visited to operate the minicomputer after one day's training by Capt. Mark Fornwalt, "emcee" of the FEED "road show." According to this plan, the computer will respond to a hypothetical combat scenario. The audience will also have a chance to query and instruct the computer themselves, just as might be done in a future computer-assisted tactical operations center.

Anyone interested in further information about the demonstrations may contact the ETL Liaison Office, AV354-3624 or 703-664-3624. (Boyd Poush, "The Castle," April 24, 1981)

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## WASP'S ABILITY TO SPOT TARGETS TESTED

Terrain similar to that of the Middle East, Western Europe and the tropics will be used by Hughes Aircraft Co. to test the ability of the Wasp antiarmor missile to spot targets.

Captive flights will be held over sections of California, the northeastern U.S. and Eglin AFB, Fla., to test the system's radar seeker. Hughes Engineers will assess the seeker's ability to distinguish tank's and other military targets from on-target vehicles and background.

The tests, which started in July, will involve the seeker housed beneath a Hughes Sabreliner 40 outfitted with a complete data analysis system. L. E. Sizemore, Wasp program manager with the company's Missile Systems Group, Canoga Park, Calif., said, "We will be testing the seeker in rain, fog, snow and any kind of weather we can find."

Hughes is developing Wasp under a \$47.2 million AF contract and is competing with Boeing to win a full-scale engineering development contract.

The Wasp is intended to make swarm-like attacks on masses of enemy armor vehicles, particularly tanks. Operating plans call for the weapon to be fired in clusters of 10 or more. On-board computers will direct each missile to a specific target, allowing aircrews to launch the weapons and leave the attack area. This will increase the survival of aircrews and will allow them either to attack other targets or head for home.

The captive flights will overlap a series of free flights of the missile, starting in the fall of 1981. Hughes will build eight prototypes for the flight test program. (Leonard Famiglietti, "Air Force Times," August 3, 1981.)



## NEW MEMBERS

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## EGLIN AIR FORCE BASE

It was the custom in the early 1930's for the Air Corps officers stationed at Maxwell Field, Alabama, to spend their weekends at Valparaiso, Florida, enjoying the beaches and sun. Because the area was sparsely populated and on the vast Gulf of Mexico, Captain Arnold H. Rich and his fellow weekenders recognized the potential of the area for testing.

On June 14, 1935, the Valparaiso Bombing and Gunnery Base was activated on land donated by James R. Plew, a Valparaiso resident interested in aviation. A detachment of 15 enlisted men under Captain Rich manned this sub-post of Maxwell Field. The Valparaiso Base was redesignated Eglin Field on August 4, 1937, in honor of Lieutenant Colonel Frederick I. Eglin, an Army Air Corps aviator, who was killed in the crash of his aircraft near Anniston, Alabama on January 1, 1937.

Upon the outbreak of World War II, Eglin became a primary center for testing aircraft and equipment and training pilots in tactics. Eglin was one of the sites for training pilots on the famous "Doolittle Raid" against imperial Japan; and Eglin was also the location for studying and working out a way to destroy the German V-1 rockets used against England.

Eglin became an important missile test center with the addition of an overwater test range in 1961. Important research and development has included work with the BOMARC missile, Laser-guided missiles and the tactics of "special operations."

During the Vietnam conflict, Eglin was the training site for the Son Tay Raiders, a group who made a daring attempt to rescue American POWs from the North Vietnamese prison camp of the same name. On October 1, 1979, Eglin's Armament Development and Test Center was upgraded to the level of a Division (now the Armament Division) because of broader scope and responsibility in fulfilling Eglin's mission.

The Armament Division (AD) is charged with a uniquely complex mission focusing on the planning, research, development and acquisition of conventional air armaments and the test and evaluation of armament and electronic warfare systems and related equipment. This Division arms the Air Force.

The four major mission areas assigned to AD are: (1) research and technology, (2) systems development and acquisition, (3) test and evaluation, and (4) host and base support. This full spectrum assigns cradle-to-grave responsibility for air armaments to one organization. Syn-

ergism is further enhanced by using the commands' tenant organizations which are assigned to Eglin.

Research and technology, and systems development and acquisition mission areas are organized under a single manager, the Deputy Commander for Development and Acquisition, to centrally control the efforts of AD's Air Force Armament Laboratory and the development plans, systems acquisition and acquisition logistics organizations. This one focal point ties together basic research; exploratory development; advanced development; master planning; and conceptual, validation, full-scale engineering development, production and deployment phases of acquisition. The elements of integrated logistics support are provided by a joint Air Force Systems Command (AFSC) and Air Force Logistics Command (AFLC) office.

AD's 3246th Test Wing, equipped with a fleet of approximately 40 modern aircraft and highly instrumented ground facilities, manages the division's overall test and evaluation program. To accomplish its mission, the wing utilizes several large land test ranges scattered throughout the 724-square mile Eglin complex as well as 44,000 square miles of water ranges located in the adjacent Gulf of Mexico. Major tests on or above AD's ranges cover all kinds of equipment, including aircraft systems, subsystems, missiles, guns, bombs, rockets, targets and drones, high-powered radars and airborne electronic countermeasure equipment.

Equipment is tested in a variety of environments and combat conditions are realistically simulated. One of the Test Wing's unique capabilities is the McKinley Climatic Laboratory which is capable of testing military hardware as large as a bomber in environments ranging from -65° to 165° degrees Fahrenheit with 100 mph winds, icing, clouds, rain and snow.

Major General W. B. Maxson is the current Commander of the Armament Division, and Mr. H. L. Demmig is the Chief Scientist.



**Eglin Air Force Base, Florida**

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