# Transportation News

## Two Years is Not Enough

The current 2-year design-frequency used to design surface drainage for military airfields and heliports is not considered adequate to protect the infrastructure. Therefore ETL 1110-1-XXX, "Airfields/Heliports Surface Drainage Design" is being published by the Army to require drainage to be based on a 10-year design-frequency, unless exceptional circumstances require greater protection. This will apply only to Army and Air Force airfield projects most of which already meet the 10-year design-frequency since a minimum of 12-inch pipe is typically specified for easy clean out.

On 30 September 2002 the Navy published Interim Technical Guidance (ITG) 02-04, "Airfield Heliports Surface Darinage Design". The ITG requires a 2-year design for runway and taxiway pavement, 2-5 year design for apron pavement and 10-year design for hangers and other important airfield facilities.

The ETL and ITG will apply until a UFC manual is published to contain all services' requirements and combines the surface and subsurface criteria found in the TM 5-820 series.

## Guide Specification Change to Undam Potential Problems

There have been problems in the field with sod creating dams along the edge of airfield pavements. In an effort to eliminate the problem the following change to the Sodding Guide specification, UFGS 2922a, has been recommended for sodded areas adjacent to airfield pavements …

**3.2.1.1 Finished Grade for Airfields**
Finished grades in sodded areas shall be undercut sufficiently so the top of newly laid sod will be 37.5 mm (1 1/2 inches) below adjacent paved areas and flush with any adjacent seeded or turfed areas except when directed otherwise by the Contracting Officer.

***Example*** is not the main thing in influencing others. It's the only thing.

*Albert Schweitzer*
*philosopher*

## AFCESA is Spreading the Word

*by Randall W. Brown, PhD, PE, Contract Engineer for AFCESA*

Since 1994, the Air Force Civil Engineer Support Agency (AFCESA) Pavements Program has supported Base Civil Engineer (BCE) and Major Command (MAJCOM) engineering personnel through the publication of Engineering Technical Letters (ETLs). ETLs are an effective way to provide pertinent technical information in a timely manner.

While ETLs vary greatly in subject matter and length, the production process is fairly standard and straightforward. First, the need for additional information in a technical area is identified. MAJCOM and AFCESA Pavement Engineers are often key players in this step. After topics are identified, priorities are established for development of ETLs, which is typically accomplished at the annual Air Force Pavements Workshop. A Subject Matter Expert (SME) is then selected for each ETL. SMEs can be from both inside and outside the Federal government and some ETLs are developed in-house by AFCESA SMEs. When the ETL is developed, the SME (author) will submit the draft to AFCESA for editorial and technical review. After the initial review by the AFCESA Technical Editor, the ETL is distributed to MAJCOM and AFCESA Pavement Engineers for review. Next, editorial and technical review comments are returned to the author so the draft can be revised, as needed. The final version is submitted to the AFCESA Technical Editor (via the AFCESA project officer) for publication on the AFCESA web site. ETLs are also posted to the National Institute of Building Sciences (NIBS) Construction Criteria Base (CCB) web site and quarterly to the CCB CD-ROM.

**Recently Published ETLs**

| | |
|---|---|
| ETL 01-06 | Contingency Airfield Pavement Specifications |
| ETL 01-07 | Large Aggregate Asphalt Mixtures |
| ETL 01-08 | Resin Modified Pavement Design/Criteria |
| ETL 01-09 | Procedures to Retard Reflective Cracking |
| ETL 01-10 | Design/Construction of High-Capacity Trim Pads |
| ETL 02-01 | Loading Criteria for Drainage Structures |
| ETL 02-07 | Preventing Concrete Deterioration under the B-1 |
| ETL 02-08 | Joint Sealant Specification |
| ETL 02-13 | Pavement Engineering Assessment Standards |
| ETL 02-14 | Rubber Removal Guidance |

**ETLs Currently in Editing**

| | |
|---|---|
| ETL 02-02 | Inspection of Drainage Structures |
| ETL 02-03 | Trenchless Construction |
| ETL 02-16 | Criteria for Thin Snow-Covered Ice Runways |

**ETLs Currently in Development**

| | |
|---|---|
| ETL 02-XX | Stone Mastic Asphalt (SMA) Guidance |
| ETL 02-XX | Rejuvenator Guidance |
| ETL 02-XX | Frost Reduction Factors |
| ETL 02-XX | Alkali-Silica Reaction (ASR) Guidance |

For more information contact Jim Greene, HQ AFCESA at DSN 523-6334, Commercial (850) 283-6334 or e-mail james.greene@tyndall.af.mil.

## New Publication for Assessing Pavements

Hot off the press is Air Force ETL 02-13, "Pavement Engineering Assessment Standards", which provides standard procedures for identifying, validating, prioritizing, and rating pavement projects. Pavement Condition Index (PCI), Structural Index, Friction Index, and Foreign Object Damage (FOD) Index (optional) are the tools used to rate the airfield pavements and produce an Engineering Assessment. The only factor used to determine the Engineering Assessment for roads and vehicular parking lots is the PCI.

Assessment categories are based on the criteria below. A step-by-step procedure for determining the Engineering Assessment for airfield pavements is described in the ETL, which is available at www.afcesa.af.mil/Publications/ETLs/default.html.

For more information contact Jim Greene, HQ AFCESA/CESC, DSN 523-6334, commercial (850) 283-6334, or e-mail james.greene@tyndall.af.mil.

### Airfields

| Rating/Assessment Category | Pavement Condition Index (PCI) | Friction Index (Runways Only) | Structural Index (ACN/PCN) | FOD Index |
|---|---|---|---|---|
| **Adequate** | > 70 | > 0.49 | < 1.10 | < 15 |
| **Degraded** | 55 - 70 | 0.34 - 0.49 | 1.10 - 1.40 | 15 - 30 |
| **Unsatisfactory** | < 55 | < 0.34 | > 1.40 | > 30 |

### Roads

| Rating/Assessment Category | Pavement Condition Index (PCI) |
|---|---|
| **Adequate** | > 70 |
| **Degraded** | 55 - 70 |
| **Unsatisfactory** | < 55 |

## Airfield Damage Repair (ADR) Manual

To expedite repairs to an airfield it is important that each branch of service (Army, Navy, Marine Corps, and Air Force) be familiar with the various services' Airfield Damage Repair (ADR) operations. Due to recent events overseas, it became evident that there was a lack of familiarity and consistency in ADR procedures, equipment, material, and unified pavement specifications. As a result, a working group formed to bring together the services and provide unity and consistency to ADR. As a product of their endeavor the group produced UFC 3-270-07, *Airfield Damage Repair*, dated 12 August 2002. This document outlines ADR procedures, techniques, and materials for spall repairs, expedient/sustainment crater repairs, FOD covers, aluminum mats, repair evaluation methods, and permanent repairs for each service. The manual is available on the TECHINFO web site at www.hnd.usace.army.mil/techinfo/instruct.htm. The working group will be meeting again in November 2002 in hopes of enhancing the UFC by developing one set of common ADR practices instead of documenting practices for each service.

For more information, contact Jim Greene, HQ AFCESA, DSN 523-6334, (850) 283-6334, or e-mail james.greene@tyndall.af.mil or Dr. Randall Brown, HQ AFCESA (ARA), DSN 523-6338, (850) 283-6338 or e-mail randall.brown@tyndall.af.mil.

## Reference List Available for UFGS Sections

Do you need to update references within an existing Guide Specification? Or want to know what the latest reference being used is? Now available is a document that lists publications referenced in the Unified Facilities Guide Specifications (UFGS) of the Corps of Engineers, the Naval Facilities Engineering Command, the Air Force Civil Engineer Support Center and the guide specifications of the National Aeronautics and Space Administration. The 303-page document gives the address, phone number and web links (if available) for each referenced organization and lists the publication number, title and issue date for each publication. This list will also be helpful when you need to create or add a reference to a project specification. The Adobe Acrobat file is available at: www.hnd.usace.army.mil/techinfo/gspec.htm. Scroll down to the bottom of the page and click on "Unified Master Reference List (UMRL)". The UMRL is maintained by the National Institute of Building Sciences (NIBS) based on information provided by the agencies involved and is published in electronic form every three to six months.

## Making Its Mark

Currently in the works is an ETL to update the runway pavement markings found in TM 5-823-4, "Marking of Army Airfield-Heliport Operational and Maintenance Facilities". If funding is approved in FY03 a new manual, UFC 3-260-04, "Standard Airfield Pavement Marking Schemes", will be written to incorporate the ETL, comply with international standards and eliminate differences between Air Force, Army and FAA criteria, where possible. Until publication of the new ETL and UFC, refer to the publications given below for each agency.

**Air Force**
ETL 94-01, "Standard Airfield Pavement Marking Schemes"
www.afcesa.af.mil/Publications/ETLs/default.html

**Army**
TM 5-823-4, "Marking of Army Airfield-Heliport Operational and Maintenance Facilities"
www.usace.army.mil/inet/usace-docs/armytm/

**Navy**
NAVAIR 51-50AAA-2, General Requirements for Shorebased Airfield Marking and Lighting"
www.efdlant.navfac.navy.mil/lantops_15/topics/Facilities/aviation.htm

## PAVER Training

Training courses for Micro PAVER are offered through the University of Illinois Urbana-Champaign Technical Assistance Center (TAC). The next course for Micro PAVER5.0 will be 9 – 13 December 2002 (Level One - Monday & Tuesday; Level Two - Wednesday through Friday Noon) in Orlando, Florida. For more information on the course or for specialized training visit the TAC web site at www.conted.uiuc.edu/techctr/training/training.html.

## All of DoD Now Required to Use UFC and UFGS

With the signing of Memorandum "Department of Defense Unified Facilities Criteria," on 29 May 2002, all of DoD is now required to use Unified Facilities Criteria (UFC) and Unified Facilities Guide Specifications (UFGS).

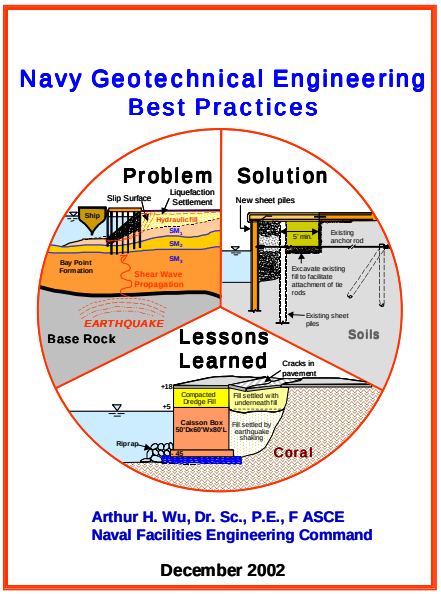
Guidance for developing and maintaining unified facilities is set forth in MIL-STD-3007, "Department of Defense Standard Practice for Unified Facilities Criteria (UFC) and Unified Facilities Guide Specifications (UFGS)." This supersedes MIL-STD-3007A, dated 30 September 2001, and is to be used for the planning, design, construction, operation, and maintenance, sustainment, restoration and modernization of facilities for the Army, Navy, Air Force, Defense Agencies and DoD Field Activities, regardless of funding source.

Where there is no UFC or UFGS, existing criteria is still in effect and should be used until superseded or incorporated into a UFC or UFGS.

MIL-STD-3007 is available at www.dsp.dla.mil (click "Online Specs," then use ASSIST Quick Search for "3007"), www.acq.osd.mil/ic/irm or www.hnd.usace.army.mil/techinfo (Support Documents).

## Publication on Geotechnical Issues Available Soon

UFC 3-220-02, "Navy Geotechnical Engineering Best Practices" will soon be available for engineers who specialize in geotechnical, civil, and structural engineering. The document will consist of descriptions of the geotechnical problems, solutions, and the lessons learned. To emphasize the problems and solutions of the case studies, graphical illustration will be used to maximize the understanding of the projects.




This geotechnical engineering publication will contain three main features:

- The geotechnical problems encountered in the Navy's design and construction projects during the last 28 years.
- The solutions of the problem after investigation and analysis.
- The lessons learned from the project experiences.

Dr. Arthur H. Wu, author of the publication, served as a Geotechnical Engineer, Geotechnical Engineering Consultant, and Geotechnical Discipline Leader for the Naval Facilities Engineering Command (NAVFAC) during the past 28 years. For more information on Dr. Wu refer to article in this issue of *Transportation News*, "Star-Studded Party Planned for Retiring NAVFAC Engineer".

# Pope AFB Airfield Renovation Project

***Milled Asphalt from the Runway***

"The big deal about this project [runway renovation] was we did $4.5M worth of work in approximately 30 days with very few problems. It took real teamwork between the Corps, the Air Force, and the contractor to pull it off," reflects Ken Hevner, HQ Air Mobility Command, "It is very costly when we TDY aircraft because of a runway closure, often this cost exceeds the contract cost. So getting it completed on schedule was a big deal to us."

Mr. Hevner is referring to the Airfield Renovation Project at Pope AFB, North Carolina. The project was designed and executed by the U.S. Army Corp of Engineers, which was the best avenue to get the project executed in a timely manner. The project had to be completed between 18 February and 22 March 2002 or result in a major mission impact. Not an easy task since the runway renovation included:

- Milling and overlaying the runway and ALZ
- Concrete slab replacement on the runway touch down areas
- Installing new 18" storm drainage at Taxiway Delta and the runway
- Replacing asphalt shoulders on the runway overruns
- Adding new 10' asphalt shoulders for the ALZ
- Repairing and replacing the main runway asphalt shoulders
- Replacing assault landing zone pre-threshold lines
- Installing new ALS distance marking panels and lighting system
- Replacing the runway approach lights
- Grooving the runway

***Installation of Edge Lights on New ALZ Shoulder***

***Full Depth Slab Replacement on Parking Ramp***

In addition to the runway work the following $2 M worth of projects were also completed during the runway closure:

- Replacing multiple slabs on the parking ramp
- Emergency repair of airfield sinkholes
- In-house repair of slabs on ramps

"This project is an example of excellent teamwork that was led by the Pope Civil Engineering Team. They partnered with the Savannah Corp for the design and construction of this desperately needed project. Without this team effort and coordination we wouldn't be able to fly our large transport aircraft in support of the war on terrorists," praised Mr. Ken Hevner.

***Emergency Sinkhole Repair***

*Source:*
*Slides and details provided by Lt. William M. Waldron, 43rd CE Squadron and Mr. Ken Hevner, HQ ACC*

# Improve Projects with Charrettes

Charrette? Isn't that something that Charlton Heston rode in Ben Herr? They might have used a charrette to build the movie set, but for the military, the purpose of a planning charrette is to produce a draft DD Form 1391 to be used for programming and to initiate design of proposed construction. The 1391 defines the site, scope and cost estimate for the project and clearly defines the user's needs and expectations for the selected site. The design charrette is an intensive process where designers, users and installation decision makers team together to focus their input on the design of a specific project. The process includes the entire time frame of preparation, planning, on-site workshop and completion. The benefits of a design charrette are significant: schedules can be reduced due to better scope definitions, reduced design costs and construction changes, improved communication and working relationships through partnering, good project cost base, "buy-in" of the project design by the key decision makers, etc.

For more information on the DD Form 1391 Preparation Planning Charrette Process refer to *Engineering and Construction Bulletin*, No. 2002-13 and No. 2002-16, available at www.hnd.usace.army.mil/techinfo/Ecbull.htm.

The Transportation Systems Center has provided support at many design charrettes for airfield and rail projects. If you would like support for your next charrette or help in developing a 1391 contact Terry Sherman, Transportation Systems Center, (402) 221-7260 or e-mail terry.w.sherman@usace.army.mil.

# Runway Reconstruction – A Commitment to Success

*by Eddie Larkan, P.E. 47th Civil Engineer Squadron, Laughlin AFB, TX (The following is a portion of an article written by Mr. Larkan for "Air Force Civil Engineer" Magazine)*

The 47th Flying Training Wing (FTW) at Laughlin Air Force Base, Texas, conducts specialized undergraduate pilot training for close to 500 U.S. Air Force and allied pilots annually. The wing flies an average 300-350 sorties per day and manages and operates 248 aircraft, the largest fleet in Air Education and Training Command (AETC). So what happens when one of Laughlin's runways needs reconstruction? Civil engineers rise to the challenge and get the job done with minimal impact on the mission.

Like any major construction project there were day-to-day issues that had to be resolved, but the bottom line is Laughlin AFB's runway reopened after only 46 days of reconstruction – 15 days ahead of schedule.

***First day of laying asphalt at Laughlin AFB, Texas***

The reconstruction project included adjusting taxiway and threshold lights to new elevations, laying new base material, milling the existing asphalt surface, putting down a final surface course of asphalt the full length and width of the runway, and adding runway markings to the new surface. It also required reconstruction of taxiway Echo. Poor drainage led to a design that raised the existing elevation of the taxiway an average 15 inches.

The plan for this $4 million construction project allowed the contractor 61 days to complete the work before $12,185 per day in liquidated damages went into effect. It also had a bonus clause that allowed $10,000 per day for up to 15 days for early completion. The contractor established an aggressive schedule and completed the work 15 days prior to the deadline, collecting a $150,000 bonus for his efforts. The bonus was actually money well spent. The Air Force (and U.S. taxpayer) would have spent more money in direct cost if the runway had remained closed an equal number of days.

Several things contributed to the successful outcome of this project: good communication, which led to good planning, good weather (though not perfect), and a total commitment to succeed.

"This project was a great success: a runway completely resurfaced in very short order with minimal loss to the wing's flying mission," said Lt Col Hunerwadel. "A large part of that success was due to the excellent working relationship between Laughlin's Operations Group, Support Group, and the U.S. Army Corps of Engineers. The working groups we established early on were immensely helpful, anticipating most of the problems we later encountered and allowing for a smooth transition between two-and three-runway operations."

***Paving operation near completion - 15 days ahead of schedule***

Good communication continued once the project moved from design through award to construction. Four key teams of personnel monitored their special interests. USACE managed the technical aspects of the project, ensuring the Air Force got a complete and usable facility. The Air Force project manager monitored the schedule and ensured issues potentially delaying the reopening were resolved. Laughlin base operations kept an eye on safety issues including the haul route, foreign object damage control, airfield driver training and equipment movement within the active airfield. The contractor looked ahead to issues needing resolution, requesting information and clarification where needed.

Finally, a total commitment to succeed from all parties involved capped the success. That included HQ AETC, Laughlin, USACE and the contractor and his subcontractors. Total commitment meant getting immediate response to questions and concerns, as well as providing the same when asked.

"The entire 47th FTW to include military, civil service and contractors alike knew how much this was going to impact training," said Billie Jo Williams, airfield manager. "From the many hours of pre-planning efforts, to the late nights spent for setup, through the long days and many weekends of construction and the final inspection, along with some last minute efforts to adjust things as required to support the mission, all involved started with and maintained their focus on the mission. This just shows how diverse the Laughlin community dedication is, which makes me proud to be a part of this flying mission."

## And the Award goes to…

The American Concrete Paving Association (ACPA) announced winners and finalists of this year's Excellence in Concrete Pavement Awards in their e-newsletter "On The Grade", *Volume 2, Number 34*, dated 30 August 2002. And the award goes to the Repair Keel Section, Runway 22-04 project at Cannon AFB, New Mexico as a finalist in the Commercial Service & Military Airports category.

The project involved replacing the 12" thick PCC keel section of the existing runway (8000' long by 80' wide), hardening the 22 overrun (removing and replacing the existing AC and double-bituminous surface treatment with a new AC surface), and relocating two BAK-12 systems. Replacement of the Runway 22-04 keel pavement through the Runway 13-31 intersection required closing both runways. For the intersection construction it was extremely important to accelerate the construction process and limit the required airfield closure time, which required considerable timing and coordination. The construction of the intersection was completed within the 30-day allotted time required.

Cannon AFB and HQ Air Combat Command (ACC) were very happy with the quality and timely completion of the project. It was only through teamwork and dedication, by all partners, that produced this award-winning project. Team members included Max Pastor (Resident Engineer), Donna Russell (Project Engineer) and Keith Wiley (Construction Representative) of the USACE Resident Office at Cannon AFB; Pat Sears (Project Manager), Pete Zamie (Chief of Engineering and Construction Flight) and Harold Walker (Chief of Design and Construction) of the USAF 27th Base Civil Engineer Office; Steve White (Project Manager) of USAF ACC; Dan Lenz (Project Manager of USACE Albuquerque District; Gene Gutierrez (on-site technical support) of USACE Albuquerque District and TSC Special Consultant; Richard Thuma (Project Designer of Crawford, Murphy & Tilly Inc.; and Dave Cooley (Project Manager) of Sundt Construction Inc. Award plaques will be presented at the ACPA's annual convention in December 2002 in Boca Raton, Florida.

For more information contact Max Pastor, USACE Cannon Resident Office, (505) 784-2861, Gene Gutierrez, USACE Albuquerque District, (505) 342-3485 or Cliff Sander, HQ ACC, (757) 764-3668.

## What's Wrong with this Picture?

**Read on to find the correct answer...**

## Technical Support Available

One of the services the Transportation Systems Center (TSC) provides is technical support to Districts, whether it is on the phone or on-site, the TSC is available to help Districts and ensure a quality product.

Examples of recent support provided by the TSC include:

- On-site technical support to Louisville District for a 4-month warranty inspection of the Ramp Construction, Phase I, at Wright-Patterson AFB, Ohio.
- On-site technical support to Seattle District (Mt. Home Resident Office) for construction of the runway and apron at Mt. Home AFB, Montana.
- Value Engineering Study for Interim Runway Project at Michael Army Airfield, Dugway Prooving Grounds, Utah in support of the Sacramento District.
- Railroad track inspection for the Fort Riley, Kansas DPW.
- Attend kick-off meeting and site visit for the Relocate Runway Project at Iwankuni Marine Corps Air Station, Japan in support of the Japan District.

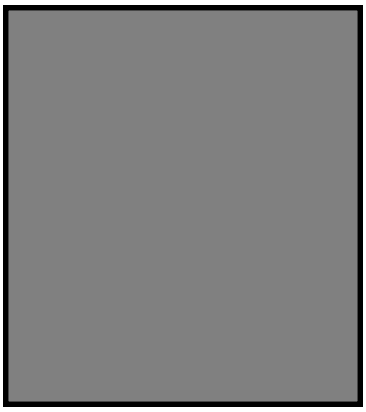
In need of technical support? Contact Terry Sherman (402) 221-7260 or e-mail terry.w.sherman@usace.army.mil.

## The Keiko Report

Keiko is free! This summer our favorite whale (the whale the Air Force helped to return to his native home) has severed his human ties and is swimming among friends of the wild. He did return briefly to his containment area (where he was nursed back to health) on July 14th, but immediately returned to swimming near the other whales. A team from the Humane Society of the United States tracks his progress with a VHF radio transmitter and are thrilled with his progress in adapting to his environment. Keiko surpassed the Society's most optimistic expectations. Way to go Keiko! *Previously published reports on Keiko are available in Transportation News, Volumes 21 and 16.*

# Original TSMCX Team Member Retires from USACE

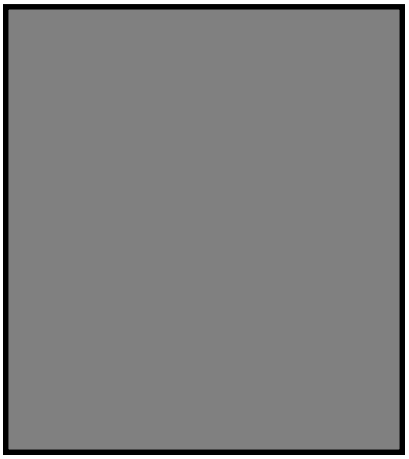
Mr. Bob Chamlee, USACE Mobile District retired from the Corps of Engineers on 1 October 2002. In 1987, HQUSACE established three mandatory technical review centers: the North Pacific Division (Oswin Keifer), the Missouri River Division (Bill Coy) and the South Atlantic Division (Bob Chamlee). Mr. Chamlee was responsible for the review of airfield pavement projects within the South Atlantic Division, the Ohio River Division and the European Division. The review centers eventually evolved into the Transportation System Mandatory Center of Expertise (TSMCX). In 1990 Mr. Chamlee served as the TSMCX Regional Review Center for the Corps of Engineers South Atlantic Division (CESAD). In 1991 the regional review centers were disestablished but he continued to help out the TSMCX as a special consultant until 1995 when he became Chief, Soils Section at the Mobile District. He did not retire from engineering though; he will be sharing his expertise with Arcadis, Geraghty and Miller in Chattanooga, Tennessee. Mr. Chamlee was an important team member of the TSMCX; we will miss his expertise within the Corps but know that our well-paved paths will surely cross again. Congratulations Bob on your retirement and we wish you the best of luck in your new endeavors.



***Bob Chamlee, USACE retiree, with his wife Audrey***

# Star Studded Party Planned for Retiring NAVFAC Engineer

After a distinguished 28 years of service with NAVFAC, Dr. Arthur Wu, Senior Geotechnical Engineer, will be retiring. A retirement party in December 2002 is planned to honor and acknowledge Dr. Wu's achievements and accomplishments over the years. Guests at the retirement party in December will include U.S. Congresswoman Connie Morrella, Admiral Johnson, NAVFAC Chief, and Dr. Jim Wright, NAVFAC Chief Engineer, as well as U.S. Department of Commerce, Deputy Under-Secretary of Technology Administration, Benjamin Wu (Dr. Wu's son) who was appointed by President George W. Bush last year.



***Dr. Arthur Wu, retires after distinguished career with NAVFAC***

In his career with NAVFAC, Dr. Wu has served as Senior Geotechnical Engineering Consultant, overseeing the design and construction of many of Navy's facilities around the world. In addition, Dr. Wu has served as Expert Witness in many contract litigation cases. He saved over $20 million in design and construction costs for the government. In 1985 and 1996, Dr. Wu was selected as NAVFAC Engineer of the Year. In 1997 he was voted as one of the Top 10 Federal Engineers. In addition to publishing over 100 technical papers and articles, he also taught at U.S. Naval Academy in 1978 and taught evening courses at George Washington University for 3-years and the University of the District of Columbia for 12-years.

***NAVFAC Geotechnical Workshop hosted by Dr. Wu held at the Washington Navy Yard in September 2002***

Dr. Wu is currently working on writing a geotechnical engineering book to be published as UFC 3-220-02, entitled "Navy Geotechnical Engineering Best Practices" (see article on page 4, entitled *Publication on Geotechnical Issues Available Soon*). The published book will be handed to Dr. Wu at his retirement party as a tribute and display of his contributions to the Navy over the years.

Susie Wu, Dr. Wu's wife, works for the U.S. Dept. of Agriculture as a Special Assistant to the Chief Information Officer. Dr. Wu has been so busy with his book that he and his wife have not yet made any plans for after retirement. Possible ideas include traveling and visiting with the grandchildren.

Congratulations Dr. Wu and thank you for your all dedication and contributions to the Navy and Federal Government over the last 28 years!

## Meet the TSC Director

With 28 years of experience, Terry Sherman, has paved a path for others to follow. The director of the Transportation Systems Center (TSC) began his career 28 years ago with the Wisconsin DOT as a highway design engineer. After a few years with WDOT he moved even further north to Alaska to begin his career with the Corps of Engineers at the Alaska District in Anchorage. Although his love for Alaskan fishing remained he did not and moved to Omaha to be chief of the Concrete and Material Section at the Missouri River Division Laboratory. After a 6-year lay over at Headquarters Strategic Air Command as the Command Pavements Systems Engineer he continued his Corps career at the Missouri River Division in 1988 as the Division Materials/Pavements Engineer. In 1990 Terry put together the TSC team and was appointed director. In addition to supervising the TSC team, he is currently involved in developing pavement criteria, solving construction issues and developing and teaching the Airfield Paving Workshops (see *Airfield Paving Workshop* article in this issue).

***Terry Sherman, TSC director, with his boys Zach (right) and Ben (center). Not pictured are his daughter Katie and wife Mitzi.***

Terry writes, "I've been very fortunate to have a career where each job has been better than the previous one. This is the best job I've ever had! I really enjoy working with the exceptionally talented persons on the TSC team and the diverse and challenging opportunities of serving the Army and the Nation in planning, design and construction of safe and effective military airfields, railroads and roadways worldwide. I especially enjoyed the privilege of working with Oswin Keifer, Jr. for over 19 years (see special edition, Volume 18 of *Transportation News*). I miss his knowledge, expertise, dedication and "can do" attitude."

"Family first" has always been part of Terry's philosophy and he practices what he preaches. With 3 children Zak (age 15), Katie (age 14), and Ben (age 8) he and his wife Mitzi are always on the go (or in the car, another aspect of transportation systems) – to practices, recitals, school events, etc. When Terry is not busy with carpooling or resolving issues at work he enjoys coaching youth sports, golfing, playing softball, fishing in Alaska and attending Nebraska Cornhusker football games (even when they are losing).

## Kudos to…

Gene Gutierrez, Albuquerque District, Rick Donovan and Gainard Mattke, Transportation Systems Center, received the Charles Trainor Award from the Savannah District for their dedicated work as part of the team that successfully completed the Overlay Runway Assault Landing Strip Project at Pope AFB for the 43rd Military Airlift Wing. The award reads, "The project involved repairs and maintenance to the runway and assault landing strip, which had to be completed within 30 days. All runway operations were halted during this period, making it extremely critical that the project be completed as scheduled for the customer and the soldiers at Fort Bragg who depend on the airfield for airlift support. Extremely poor weather impacted the operation and caused the team to work around the clock in shifts. Contract modifications were necessary and were handled expeditiously by the team. Corps airfield pavement specialists from the Omaha and Albuquerque Districts provided consultation and advice on the mix design, keeping the project on track. In the end, the team overcame time constraints, poor weather, and coordination challenges to deliver a quality project to the customer on time".

## Kudos to…(Cont'd)

Gainard Mattke received a Certificate of Appreciation from the Air Force's Air Mobility Command (AMC) 319th Support Group for his support to the Grand Forks AFB Base Civil Engineer on the Repair Drainage C Ramp project. Per request from HQ AMC, Mr Mattke sat at the engineer's desk to help with the design during the review process. Mr. Mattke was commended for, "His knowledge of pavement systems, thoroughness in reviewing the plans and specifications, and ability to convey the information necessary to improve the project… The design changes made to the project as a result of Mr. Mattke's review will greatly improve the final product".

Did you or someone you know receive an award for transportation-related work? We'd like to acknowledge the hard-working individual and give them a Kudo too. Send your Kudo acknowledgements to mary.j.adolf@usace.army.mil.

## What's Wrong with this Picture

If you detected scaling of the PCC surface due to incomplete dissipation of bleed water you are correct. Bleed water migrating upward was trapped beneath the finished and cured surface, which resulted in surface delamination.

## Recent Airfield Paving Workshops

In order to improve airfield construction the Transportation Systems Center along with Dr. Ray Brown, NCAT and Gene Gutierrez, USACE - Albuquerque District provide Airfield Paving Workshops on how to construct quality airfield pavements. Information on the workshops is available in Volume 21 of *Transportation News*. Recent workshops include:

- A one-day workshop at Malmstrom AFB, Montana for the Air Force's 819th Red Horse Squadron. The 819th RHS will be constructing hot mix asphalt (HMA) overlay and full depth repairs to the runway at Masirah Island, Oman. The workshop emphasized transporting, surface preparation, placement/laydown and compaction for the equipment operators and emphasized testing, mix design, plant operations, troubleshooting and case studies for the engineers and engineer assistants.

- A three-day workshop at Altus AFB, Oklahoma for the Repair Airfield, Phase I construction. Thirty-eight persons attended, including representatives from Corps of Engineers' Altus AFB Resident Office and Tulsa District, Altus AFB base civil engineering, contractor, subcontractors, testing laboratory, materials suppliers and HQ AETC.

For more information contact Terry Sherman, Transportation Systems Center, (402) 221-7260 or e-mail terry.w.sherman@usace.army.mil.

## Criteria Document Update

Work is underway to bring the latest changes in criteria to the field. Below is the schedule of what is currently being worked on and hopeful completion dates (note: continual changes to criteria and funding continually change the completion dates).

**UFGS 02753, Portland Cement Concrete (PCC) for Airfields** (Major Update)
February 2003 – Final Draft
April 2003 – Manuscript

**UFC 3-260-01, Airfield & Heliport Planning & Design** (Update)
December 2002 – Final Draft
March 2003 – Air Force to publish

**UFC 3-260-04, Standard Airfield Pavement Marking Schemes** (New)
October 2002 – Army ETL published (See article on page 4, *Making Its Mark*)

**UFGS 02741 Hot Mix Asphalt (HMA) for Roads and Street s**
November 2002 – Manuscript

**UFGS 02721, Subbase Course** (Update)
January 2003 – Final Draft
February 2003 – Manuscript

**UFC 3-250-02, Standard Practice for Rigid Pavements** (Update)
September 2002 – Final Draft review meeting
Schedule not available to date – Manuscript

**UFGS 02746, Resin Modified Pavement Surfacing Material** (Review)
Schedule not available to date

**UFC 3-260-5, Design Standards for Visual Air Navigation Systems** (New)
September 2002 – Preliminary Draft
January 2003 – Final Draft
March 2003 – Manuscript

**Airfield Paving Workshop Participants Manual** (New)
January 2003 – Final Draft
March 2003 – Manuscript

**UFGS 05650, Railroads** (Update)
October 2002 – Final Draft
January 2003 – Manuscript

## www.internet.addresses

www.wes.army.mil/SL/MTC/ValStatesTbl.htm
Corps of Engineers Validated Laboratories (as of 24 September 2002) site lists labs validated according to ER 1110-1-261, "Quality Assurance of Laboratory Testing Procedures" and made by the authority of ER 1110-1-8100, "Laboratory Investigations and Testing".

www.cecer.army.mil/EARUpdate
Engineering Automation Research Update site is to keep the U.S. Army Corps of Engineers community informed about ongoing research. Site is intended to help those involved with planning, designing, and building military and federal facilities.

## Drum Roll Please…

The PCASE Committee is proud to announce the official release of PCASE2.0! Yep, you heard me right folks, after years of hard work and dedication (and numerous changes) PCASE2.0 is out and ready for your use. The software for design and evaluation of airfield and roadway pavement can be downloaded from the web site at www.pcase.com. A special thanks to the programming team at ERDC for their hard work and determination to producing a quality product. Team members include Robert Walker, John Lott, Carlos Gonzalez, Don Alexander and Edel Cortez. Also, thanks to all the users that participated in the beta testing. Your input was greatly appreciated and will be appreciated by all users. Winners of the beta-testing prize (free entrance to the TS2004 Workshop) go to Jim Lesto, NAVFAC Southern Division; Scott Melton, HQ AFCESA; David Poage, Southwest Division NAVFAC; Bob Grau, USACE ERDC; and Tom Mack, USACE Rock Island District.

Although the PCASE desktop (PCASE2.0) will be continually updated to include improvements and criteria changes it's now time to start (or finish) work on other projects. Here are a few things you can expect to see in not-so-distant future courtesy of our busy programming team at WES and CRL.

- Computer Based Training (CBT) - To further aid users training software will be developed for the PCASE desktop. CBT will be very beneficial to remote sites and as a refresher for users that do not use PCASE on a frequent basis.
- Joint and Dowel Layout - With the geometric layout of a PCC pavement the software will layout the control joints and dowel patterns in the most optimum arrangement. This will be most helpful on irregular slabs with hard to fit joint and dowel patterns. Software would also suggest when to use dowels, tie bars, isolation joints, etc.
- Ground Vehicle Characteristics - Vehicle characteristics (manufacturer, length, width, height, weight, axles, turning radius, type of wheel, tire pressure, and special characteristics) will be added to the vehicle editor for ground vehicles to aide in the design and layout of roadway pavements.
- Data Server for PCASE - A web-based computer system will be developed that will serve as a central data location for transportation system data. All resources on this system will be accessible from any Internet-connected machine, allowing access from work, home, or other off-site location.
- Automated Estimates for Modulus and CBR of Pavement Layers - This system will guide the user through a series of questions in order to produce reasonable estimates for material properties, given any level of information. If the user knows very little (e.g. soil classification), the distribution of input variables will be relatively broad. If the user knows moisture content or density or has DCP data, input distributions will become narrower. This system will be useful for cases where extensive field-testing cannot be performed. It would also help to prevent misguided guesses for material properties when detailed information is not available.
- What Can I Land - Given a pavement classification number (PCN) for the airfield, the software will automatically give the user a printout of all aircraft in the vehicle data base capable of landing on the airfield for all subgrade categories.

To learn more about PCASE2.0 and other PCASE software attend a Regional Workshop. Locations and dates of the workshops are advertised on the PCASE web site. Be sure to check the site often because workshops are added throughout the year and early sign up is recommended to secure a spot.

For more information contact Mary Adolf, Transportation Systems Center, (402) 221-7265 or Robert Walker, ERDC, (601) 634-2145.

## Calendar of Events

**National Transportation Symposium**
Auburn, Alabama
13 - 14 November 2002
www.eng.auburn.edu/center/ncat

**NAPA's 48th Annual Convention**
San Diego, California
11 – 17 January 2003
www.hotmix.org
cprouty@hotmix.org

**Transportation Research Board Annual Meeting**
Washington DC
12 – 16 January 2003
www.trb.org

**Association of Asphalt Pavement Technologists Annual Meeting**
Lexington, Kentucky
10 – 12 March 2003
www.asphalttechnology.org

**World of Asphalt Show**
Nashville, Tennessee
18 – 20 March 2003
www.worldofasphalt.com

**9th Int'l Bridge Management Conference**
Orlando, Florida
28 – 30 April 2003
POC: Frank Lisle (202) 334-2950
flisle@nas.edu

**USACE 2003 Infrastructure Systems Conference**
Las Vegas, Nevada
6 – 8 May 2003
www.spl.usace.army.mil/ISC/isc2003.htm

**ASCE Airfield Pavement Specialty Conference**
Las Vegas, Nevada
21 – 24 September 2003
www.asce.org/conferences/airfields2003

**Transportation Research Board Annual Meeting**
Washington DC
11 – 15 January 2004
www.trb.org

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Fax this page to Mary Adolf, Transportation Systems Center, FAX (402) 221-7261 or e-mail a message to mary.j.adolf @usace.army.mil.

# Transportation News

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