Transportation News

A Resource for Military Transportation Engineers

Volume 27, January 2007

In This Issue

You're Cordially Invited to attend the Transportation Systems 2008 Workshop…

Hyatt Regency, Phoenix, AZ

Treat yourself royally by attending the Transportation Systems 2008 Workshop at the Hyatt Regency in Phoenix, Arizona, 21 – 24 April 2008. The week will be filled with informative seminars and sessions on the design, evaluation, maintenance and construction of airfields, roads and railroads.

Visit the website at www.TSWorkshop.net to get all the latest news on the workshop. On the website you'll find: on-line registration and abstracts submissions (see Call for Abstracts article on page 3), hotel information, workshop schedules, exhibit and sponsor information, and other treasures.

For more information about the workshop contact Mary Adolf, Transportation Systems Center at (402) 221-7265 or e-mail mary.j.adolf@usace.army.mil.

AR 95-2 Update Complete

Army Regulation (AR) 95-2, Airspace, Airfields/Heliports, Flight Activities, Air Traffic Control and Navigational Aids was updated 29 Jan 2007, superseding AR 95-2 dated 10 Aug 1990. Significant changes include:

- UFC 3-260-01, Airfield and Heliport Planning and Design and UFC 3-260-02, Pavement Design for Airfields, will apply to all U.S. Army aircraft operational facilities.
- U.S. Army Corps of Engineers (USACE) Transportation Systems Center (TSC) will provide technical review of all real property facility designs (plans, specifications, and design analysis) for the maintenance, repair or construction (military construction or minor construction) of any item related to Army aircraft operational facilities using any type of funding (military construction Army, military construction Army Reserve, military construction National Guard, operations and maintenance, Army funds (OMA), base realignment and closure (BRAC), or others).
- USACE-TSC will provide DA technical engineering review of all requests for waivers to obstructions and engineering criteria for aircraft operational facilities established in UFC 3-260-01.
- UACE-TSC will provide technical reviews of all pavement condition surveys, pavement evaluations and charts.

For more information about AR 95-2 contact Terry Sherman, USACE-TSC, 402-221-7260, or e-mail, terry.w.sherman@usace.army.mil.

Tri-Service Icon Retires

Mr. Jim Greene, the Air Force Pavements Program Manager retired on 4 January 2007 after 41 years of federal service. A ceremony was held at the Tyndall AFB Officers Club to honor Jim and his family. Mr. Bryon Bednar, Executive Director, Headquarters Air Force Civil Engineer Support Agency served as the Officiating Officer. During the ceremony Jim received, the Outstanding Civilian Career Service Award, the DeFleury Medal from the US Army Corps of Engineers, and numerous letters of appreciation and mementos in recognition of his years of service.

Jim was born in Clayton, Alabama on 10 November 1940. He joined the Alabama National Guard in 1958. While serving in the Guard, he attended Auburn University, graduating in 1964 with a BS degree in Civil Engineering and immediately began working for the Alabama Highway Department. In 1965, Jim ended his tour of duty with the Alabama National Guard and also started work for the Jacksonville District of the U.S. Army Corps of Engineers. Jim worked with the Corps until 1972, when he became a Project Engineer for the Federal Aviation Administration at the William B. Hartsfield Atlanta International Airport. In 1977, Jim began work in his present position at the Air Force Civil Engineer Support Agency (known then as the Air Force Civil Engineering and Services Center). During his time at AFCESA, Jim has been a leader in the development of airfield pavement policy and criteria, not only for the Air Force, but also for the joint service and civil pavement communities, as well as for NATO. He was the Chair of the NATO Pavements Working Group and served on the Oversight Committee for Asphalt Airfield Pavements Technology Program, the Committee for the Innovative Pavement Research Program, and the FAA Pavements Standards Committee. Jim is a registered Professional Engineer in both Florida and Alabama. He has been recognized many times for his outstanding performance and was selected as the 2002 Unites States Air Force Federal Engineer of Year, Civilian Category. Jim will continue working at AFCESA for the coming year under a special program to help with the transition of the new Air Force Pavements Engineer.

Jim currently lives in Florida with his wife, Sylvia. They have five children (Cary, Daphne, Marcia, Jaime and Jeremy) and four grandchildren.

Consulting Support Available for the Air Force

Consulting services are available for the Air Force from USACE, Transportation Systems Center (TSC) and Engineer Research and Development Center (ERDC) for reachback support for the Global War on Terrorism and technical support to the Air Force. HQ AFCESA provided funding for the support so there is no cost to the MAJCOM or installations.

Services from the TSC include technical support (phone, e-mail or on-site) for airfield, railroad and roadway:

- Planning and design
- Construction troubleshooting
- Materials, geotechnical and drainage
- Airfield lighting, marking and NAVAIDS
- Reviews of asphalt Job Mix Formulas (JMF) and concrete mix designs
- Other technical requests from HQ AFCESA, MAJCOMs and installations

Services from ERDC include technical support (phone, e-mail or on-site) for:

- Laboratory testing associated with pavements and geotechnical design, evaluation, and construction issues
- Pavement and geotechnical design and evaluation issues as well as maintenance and repair issues
- Contingency airfield evaluation as well as airfield damage assessment and repair issues
- Airfield pavement evaluation teams
- Pavement condition surveys and pavement management including troubleshooting PAVER software and database issues

To request support contact HQ AFCESA: Jim Greene, james.greene@tyndall.af.mil, 850-283-6334; George Van Steenburg, george.vansteenburg@tyndall.af.mil, 850-283-6083; or Bill Schauz, william.schauz@tyndall.af.mil, 850-283-8338. For more information on TSC services, contact Terry Sherman, terry.w.shermant@usace.army.mil, 402-221-7260. For more information on ERDC services, contact Don Alexander, don.r.alexander@erdc.usace.army.mil, 601-634-2731.

Presentation to Jim Greene, HQ AFCESA, on his retirement, of a shadow box with the US Flag which was flown over Antarctica and coins from the Air Force and Army Civil Engineers, Air Force Major Commands and DoD Labs

On-line Abstract Submission is Now Open for TSWorkshop 2008

Share your knowledge, ideas, expertise, innovations, practices, case studies and visions by answering the call for Abstracts for the Transportation Systems 2008 Workshop.

Submit your abstract for a paper or non-paper presentation on-line at www.tsworkshop.net by 01 May 2007. Details on submission requirements and topic ideas are available on the website. Be sure to fill out the abstract submission form in order for the Committee to accept your application.

After submitting your abstract, your proposal will be reviewed by the Workshop Technical Advisory Committee and you will be notified of acceptance by 29 June 2007 along with instructions for preparing the final paper and/or presentation. Important dates for submissions are given below. For more information about the workshop see the article on page 1. If you have any questions contact Mary Adolf, 402-221-7265 or e-mail mary.j.adolf@usace.army.mil.

Schedule for Papers

Submission of abstract	01 May 2007
Invitation to prepare draft paper	29 June 2007
Submission of draft paper	01 Oct 2007
Notification of acceptance for publication	03 Dec 2007
Submission of final paper	15 Feb 2008

Schedule for Non-Paper Presentations

Submission of abstract	01 May 2007
Invitation to present	29 June 2007
Submission of final presentation	15 Feb 2008

What's Wrong with this Picture?

Read on to find the answer...

Specification News

In April 2006, the entire Unified Facilities Guide Specifications (UFGS) numbering system was converted to a new 6-digit numbering system, Construction Specifications Institute (CSI) MasterFormat 2004. The objectives of the conversion were twofold: 1) increase the quantity of available specification numbers, and 2) reorganize the entire system. The first objective was achieved by adding a digit to the numbering system. The numbering system now consists of three to four, two-digit numbers. UFGS that have been unified for use by all participating agencies (USACE, NAVFAC, AFCESA, and NASA) have a level 3 or level 4 MasterFormat™ number. The first level represents the division, followed by second, third and sometimes fourth levels of detail. The second objective was achieved by expanding the number of divisions from 16 to 50. Most pavement-related specifications are in Division 32 and soils/foundation-related specifications are in Division 31. Unfortunately, there is no simple conversion from the old system to the new system. Information on the new number system, a listing of the new designations, and the UFGS are available on the Whole Building Design Guide (WBDG) website at www.wbdg.org.

UFGS 32 13 17 (formerly 02740), Stone Matrix Asphalt for Airfield Pavements, has been revised based on comments provided by Gerry Huber and Dr. Ray Brown. The current version is dated January 2007. The U.S. Air Force-Europe is proposing to use this UFGS for an airfield pavement project at Spangdalem, Germany.

Review meetings on UFGS 32 12 15 (formerly 02749), Hot-Mix Asphalt (HMA) for Airfields, and UFGS 32 13 11 (formerly 02753), Portland Cement Concrete Pavement for Airfields and Other Heavy-Duty Pavements (more than 10,000 Cubic Yards), were held on January 22 and 23, 2007, in Washington, D.C. during the annual TRB meeting. Minor changes were identified and will be incorporated into the specifications.

The review committee is also considering a proposal to delete several of the outdated UFGS from the system. Specifically, UFGS 32 13 13.06 (formerly Navy specification 02752) and 32 13 14 (formerly Army/Air Force specification 02754) are proposed for deletion. This would leave two Tri-Service prepared/maintained specifications for PCC pavements, 32 13 13.03 for small quantities (10,000 cy) and 32 13 11 for large projects.

For more information, contact Rick Donovan, 402-221-7269 or e-mail richard.l.donovan@usace.army.mil.

Airfield Manuals Update

Two of the airfield manuals are in the process of being updated, UFC 03-260-02, *Pavement Design for Airfields* and UFC 03-260-01, *Airfield and Heliport Planning and Design*. They both are in the final review process and anticipate publication in Summer 2007.

In addition to clarifying and correcting minor errors, UFC 03-260-02, *Pavement Design for Airfields* will now have the requirements for subsurface drainage. In addition, new design charts have been added and some have been combined, but all now are synchronized with PCASE. The example problems, in the most part, have been taken out of the chapters and added as an appendix and include instructions on how to design airfield pavement thickness using PCASE software. Navy requirements have also changed, design criteria now falls in line with the Army and Air Force; we are truly Tri-Service now.

Here's a glimpse of the new table of contents for *Pavement Design for Airfields*…

1. Introduction
2. Army Airfield/Heliport Requirements
3. Air Force Airfield and Aggregate Surfaced Helicopter Slide Areas and Helicopter Requirements
4. Navy and Marine Corps Airfield Requirements
5. Site Investigations
6. Subgrade
7. Select Materials and Subbase Courses for Flexible Pavements
8. Aggregate Base Courses
9. Materials
10. Flexible Pavement Design - CBR Method
11. Layered Elastic Design of Flexible Pavements
12. Plain Concrete Pavements
13. Reinforced Concrete Pavement Design
14. *Reserved for future use*
15. Continuously Reinforced Concrete Pavement Design
16. Prestressed Concrete Pavement Design
17. Overlay Pavement Design
18. Rigid Pavement Inlay Design
19. Layer Elastic Design of Rigid Pavements
20. Seasonal Frost Conditions
21. Improving Skid Resistance/Reducing Hydroplaning Potential of Runways
22. Design of Aggregate-Surfaced Airfields, Heliports, and Helicopter Slide Areas
23. Design of Subsurface Pavement Drainage Systems

Changes for UFC 03-260-01, *Airfield and Heliport Planning and Design* include an accumulation of minor revisions and the development of Chapter 7, Shortfields and Training Assault Landing Zones which replaces the geometrics criteria in Air Force ETL 04-7. The table of contents for the updated *Airfield and Heliport Planning and Design*…

1. General Requirements
2. Aviation Facilities Planning
3. Runways (Fixed-Wing) and Imaginary Surfaces
4. Rotary-Wing Runways, Helipads, Landing Lanes, and Hoverpoints
5. Taxiways
6. Aprons and Other Pavements
7. Shortfields and Training Assault Landing Zones
8. Aircraft Hangar Pavements

For more information on the update of UFC 3-260-01 contact Gainard Mattke, 402-221-7263, or e-mail gainard.l.mattke@usace.army.mil and for UFC 3-260-02 contact Kordon Kiel, 402-221-7268, or e-mail kordon.l.kiel@usace.army.mil.

60k *Tunner* Material Handling Equipment (MHE)

The new 60k *Tunner* loader has a total loading capacity of 60,000 pounds. It will replace older, 40,000-pound capacity loaders in the Air Force inventory. The *Tunner* can carry up to six cargo pallets at once, drive on and off C-5, C-17 and C-141 aircraft, and load and unload cargo from all military and commercial cargo aircraft. Other advantages of the new loader include an improved turning radius, higher top speed and mechanized rollers that greatly enhance the loading and unloading process. The *Tunner* is much better than its predecessors—so far five times more reliable and 150 to 350 percent more capable.

For design purposes, you will want to consider the following.

- The Tunner can load or unload at any dock that is between 41 inches and 18 feet in height above the ground. Use a dock height in this range that can also handle loads from other vehicles. The ground on the loader side of the dock should be reasonably level over a minimum distance of 50 feet by 14 feet in width.

Tunner used for loading cargo on aircraft

- Pallets on the loader are 108 inches wide and controlled by raised guide rails that are 108.5 inches apart. Pallets are supported on four rows of rollers. The loader has rubber bumpers, front and back, to protect it and the dock. The loader can load or unload from either end. Normally the loader is driven forward to the dock so the operator can judge his alignment and distance from the dock. The deck can be raised, lowered, tilted side to side or fore and aft and moved side to side to insure good alignment. The deck has nine power conveyors that can drive a pallet almost all the way off of the deck, or pull one onto the deck that has been pushed approximately two feet over the loader.
- The Tunner wheel base is 336 inches from the first axle to the last. The loader has two operating modes. In travel, it has a minimum of 9.5 inches of ground clearance. In this position it will traverse the above ramp. When it is approaching a loading dock, in order for the operator to be able to raise and lower the deck, the loader must be placed in the load mode. In this mode it has only 2.5 inches of ground clearance. This means that an approach to a loading dock must provide an essentially flat surface at least 50 ft. long. The loader is 592 inches overall length. Preferably this would be a minimum of 60 ft. of flat so that the operator could stop short of the dock and lower the loader into the load mode before actually moving to the dock. The surface should be essentially flat, but it need not be level. It can slope 3 degrees in almost any direction since the deck can be pitched or rolled as necessary to match the deck to the dock. The more level it is, the easier for the operator.

For more information contact Dan Boyer, 402-221-7266 or e-mail dan.j.boyer@usace.army.mil.

General	**English**	**Metric**
Weight (unloaded)	65,000 lb	29,484 kg
Width (operational)	171 in.	4.3 m
Width (air transport)	111 in.	2.8 m
Length	49.3 ft.	15.0 m
Deck Height (variable)	39 in. to 18.5 ft.	0.9 m to 5.6 m
Width (at tires)	151 in.	3.8 m
Performance	**English**	**Metric**
Maximum Speed (loaded)	23 mph (governed)	37.0 kph
Maximum Payload	60,000 lb.	27,216 kg
Turning Diameter	98 ft.	29.9 m

What's Wrong with this Picture

A trench was being dug in the runway. It was not marked nor was a NOTAM (notice to airmen) filed. The C-130 landed on the runway at night and didn't see the construction and went through the large pit on the runway. The C-130 was totaled and there were several injuries to the crew and the few passengers that were on board, luckily no one was killed. Lesson learned – always file a NOTAM and properly mark your pavements (especially during construction).

PCASE2.09 Coming Soon!

PCASE2.09 will soon be released; updating PCASE2.08 (the current official version). An announcement will be sent to all registered users once the update is ready for release. Register today at www.pcase.com to get all the latest PCASE news. Updates to the desktop include:

- Addition of Design Builder - automatically builds several design scenarios based on user input selections and displays the alternatives
- Incorporation of the renovated CBR procedure for roads (see page 7 for more information on the renovated CBR procedure)
- Design Index was removed from the software to be consistent with criteria (minimum thicknesses and compaction requirements are now based on 18-K ESAL)
- Changed the default weight for C-17 to 585,000 pounds to be consistent with new airfield design criteria
- More vehicles added to the database
- User-requested information added to the design reports
- Ability to pack databases to a specific location
- Various modifications to be consistent with new airfield and roadway criteria
- Other modifications enhancement and/or correction

Workshops

Learn more about the new desktop and other tools PCASE has developed at a 2-day hands-on workshop. The workshops are being hosted by the Corps of Engineers and are free to participants. PCASE workshops are currently being offered at:

- USACE, Tulsa District, Tulsa, Okalahoma, 6 – 7 March 2007
- Southbridge Hotel & Conference Center, Southbridge, Massachusetts, 10 – 11 July 2007

The Air Force is also sponsoring 5-day PCASE-PAVER workshops. Attendees will receive 2 days of PCASE and 2-1/2 days of PAVER training. The workshops are being hosted by the Air Force and are free to participants. PCASE-PAVER workshops are currently being offered at:

- Wright-Patterson AFB, Dayton, Ohio, 19 – 23 March 2007
- Air Force Academy, Colorado, 30 July – 3 August 2007

You can sign up for a workshop at www.pcase.com or www.triservicetransportation.com.

For more information about PCASE, contact Mary Adolf, 402-221-7265, or mary.j.adolf@usace.army.mil.

Difficult Challenges Posed By Old Soviet Precast Airfield Slabs

by Dr. Ray Rollings

The Soviet Union often used precast concrete slabs for pavements starting from the 1930s until more recent times (e.g., Rollings, Raymond S. and Y. T. Chou. 1981. "Precast Concrete Pavements," Miscellaneous Paper GL-80-3, USAE Waterways Experiment Station, Vicksburg, Mississippi.). These slabs varied from simple hexagonal slabs 1 meter per side to larger 2m x 6m rectangular slabs. Thickness, reinforcing, and prestressing varied depending on the application and period. Methods of leveling and joining slabs also varied.

Now as US operations are expanding into Eastern Europe and Central Asia we are beginning to encounter these paving slabs with which we have no previous experience. We have been able to operate on these slabs, but currently there is poor guidance on how to evaluate this type of pavement. If plans require you to operate on such surfaces, it would be prudent to enlist the aid of pavement experts at ERDC and AFCESA for evaluation of these unusual pavements.

Some common problems associated with precast concrete slab construction include:

- **Roughness**. Precast construction of pavements historically provides rougher fields than conventional cast in-situ construction.
- **Broken welds**. Precast slabs were sometimes welded together at several points and traffic from large body aircraft sometimes broke the welds. This resulted in excessive creep and opening of joints.
- **Rocking**. Precast slabs have a history of rocking under heavy transport aircraft.
- **Structural capacity**. Precast slabs are typically of dimensions that make the Westergaard theory used in our criteria and PCASE software invalid, therefore estimates of structural capacity based on current criteria would be incorrect.
- **Interface conditions**. These slabs may be placed on an underlying slab of lean or conventional concrete with a leveling course of sand, cement-stabilized sand, or grout. These intermediate layers seem to be present to allow better leveling of the precast surface slabs. Even if grout is present, it would be unwise to assume these precast slabs are bonded to the underlying slab.

For more information contact: Ray Rollings, rollingseng@earthlink.net; Gary Anderton, USACE-ERDC, gary.l.anderton@erdc.usace.army.mil; or Captain Tom Defazio, AFCESA, Tom.Defazio@tyndall.af.mil.

Renovation of the CBR Design Procedure

by Dr. Walter Barker, USACE-ERDC

The Army Corps of Engineers is in the process of implementing a major change in the CBR (California Bearing Ratio) procedure for design of flexible roads, streets and parking lots. The adoption of the changes to the CBR procedure for design of flexible pavements represents the first significant change in this method for design of flexible pavements in some 35 years. The method was originally developed in the 1940's for design of flexible pavements to support heavy bomber aircraft. The original airfield design curves were an extrapolation of the California pavement design curves for highway pavements. These curves were modified and verified by extensive full-scale field testing. In 1955, the classical CBR equation $t = \sqrt{\frac{ESWL}{8.1 \cdot CBR}} - \frac{A}{\pi}$, was introduced into the Corps of Engineers CBR design procedure. In the late 1960's and early 1970's, as a result of extensive prototype testing with full scale multi-wheel aircraft assemblies, the classic CBR equation was modified with the introduction of a thickness reduction factor (Alpha factor). The thickness reduction factor was to account for traffic volume and better than expected performance from multi-wheel assemblies. Although the CBR design procedure has been in use for design and evaluation of both military and civil airfield pavements since 1970, the basic mechanistic nature of the procedure has not been recognized, even by the developers of the procedure. By using a theoretical method (Frohlich's stress concentration factor method) for computing stress at the top of the subgrade, the basic mechanistic foundation for the CBR equation can be explained and the performance criteria identified. Using the theoretical method for computing stress, the performance criteria contained in the CBR procedure can be computed directly without resorting to the equivalent-single-wheel-load (ESWL) concept. These criteria were recalibrated to available prototype test data producing design criteria which eliminated thickness adjustment factors (ALPHA factors). Because of the improved predictive capability of the new CBR design methodology, the new methodology is being adopted by the military for design and evaluation of flexible pavements. The first implementation of the new CBR design procedure is in the design of flexible pavement for roads, streets and parking lots. The new procedure will result in more accurate predictions of pavement performance, particularly for pavements subject to traffic of vehicles having a large number of tires. Adoption of the new procedure for design of flexible pavements for airfields is expected to follow in the near future.

For more information, contact Dr. Walter Barker, 601-634-4873, or e-mail walter.r.barker@erdc.usace.army.mil.

Green Highways

There is an initiative in the Federal Government to promote environmental stewardship in transportation planning design and construction. The goal is "to foster partnerships for improving upon the natural, built and social environmental conditions, while sustaining life-cycle functional requirements of transportation infrastructure – providing for conditions that are better than before." The last three words are the main theme of the initiative; that we should strive to leave a construction site in better environmental condition than preconstruction.

The Green Highways initiative is very consistent with the Corps of Engineers sustainability guidelines. Supporters recognize that transportation projects do not fit the same mold as the Green Building, LEED or the SPiRiT rating systems and therefore need their own rating and support network. The Green Highways initiative could be just the ticket.

Green Highways is focused on voluntary participation through public/private partnerships and its philosophy centers around the following principles:

- Promote use of recycled materials
- Remove barriers to achieve innovative and positive results.
- Promote storm water protection (wetlands)
- Support research and training of stakeholders
- Utilize market-base approaches and economic incentives

A great example of collaboration between the private and public sectors is the old Denver (Stapleton) Airport. Recycled Materials, Inc. agreed to remove all of the old runway and taxiway pavements at no cost to the developer. The company recycled 6.5 million tons of concrete into good quality aggregate. The coarse aggregate has been successfully used in new PCC mix designs to produce flexural strength of 800 psi. Over a million tons of fine material was used next door at the Rocky Mountain Arsenal as cover material for a hazardous material site.

Continued on Page 8

Green Highways (Cont'd)

The Corps of Engineers and most design engineers already embrace these concepts. Occasionally some significant environmental improvements can be implemented with no additional cost to the project. More often, engineers are faced with a decision to implement holistic design concepts at slightly higher first cost; it is therefore important to educate and gain the support of all project stakeholders. On small DOD projects, where the majority of the benefits are within a military installation, the designer will need to gain the support of the installation engineering and environmental personnel. On larger civil works projects and some military projects the issues will need to be worked through partnering meetings with all of the stakeholders. Our job as designers, is to expend funding in a manner that is consistent with the wishes of the taxpayers (which is hopefully the same as the guidance from the federal government). There may come a day that some joint funding is made available from other federal and state agencies like the Department of Fish and Wildlife or EPA for more significant environmental contributions and enhancements.

The Corps of Engineers also has a regulatory function that is a key player in the collaborative process of working together with other federal, state, and private organizations. Our regulatory personnel need to draw off the expertise of the Corps' highway designers to ensure the best solutions within acceptable budgets are considered or as the slogan goes, "better than before."

For more information on the Green Highway initiative visit the website at www.greenhighways.org. A source for recycled material is available through the University of New Hampshire at http://www.rmrc.unh.edu/. For more information on the contents of this article contact Dan Boyer, 402-221-7266 or e-mail dan.j.boyer@usace.army.mil.

Transportation News goes electronic

Receive the latest Tri-Service pavement information by signing up to receive e-news. You can sign up by e-mailing mary.j.adolf@usace.army.mil (please put "e-news" in the subject line).

Guidance for Unmanned Aircraft Systems

Department of the Army has issued an Interim Guidance for Unmanned Aircraft Systems (UAS) Facilities and Operations In and Around Army Airfields (AAF) in the National Airspace System (NAS). The document contains guidance and criteria for UAS operations not covered in current Army Regulations (AR), Field Manuals (FM) and Unified Facility Criteria (UFC) and applies to the active Army, Army National Guard, and Army Reserve. The Interim Guidance is available on the TSC website at www.tsmcx.com (look under Services – Criteria).

Where to get UFCs

TM 5-822-2, dated 14 July 1987, "General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas", was published as UFC 3-250-18FA in January 2006. This and other UFCs are available at www.wbdg.org.

Calendar of Events

NAPA's 52nd Annual Meeting
17-21 February 2007
San Francisco, California
www.hotmix.org

Asphalt Paving Technologists (AAPT)
San Antonio, Texas
12 – 14 March 2007
www.asphalttechnology.org

World of Asphalt
Atlanta, Georgia
19 - 22 March 2007
www.worldofasphalt.com

FAA Worldwide Technology Transfer Conference
Atlantic City, New Jersey
April 15-18, 2007
www.airporttech.tc.faa.gov/naptf/att07/

ACI Convention
Atlanta, Georgia
22 – 26 April 2007
www.concrete.org

ACI Convention
Fajardo, Puerto Rico
14 – 18 October 2007
www.concrete.org

Int'l Conference on Optimizing Paving Concrete Mixtures & Accelerated PCCP Construction & Rehab
Atlanta, Georgia
7 – 9 November 2007
www.fhwa.dot.gov/pavement/concrete/2007CPTPconf.cfm

Transportation Systems 2008 Workshop
Phoenix, Arizona
21 – 24 April 2008
www.tsworkshop.net

9th International Conference on Concrete Pavements
San Francisco Bay Area, California
August 2008
www.concretepavements.org

TSC Senior Airfield Engineer Retires

Congratulations to BJ Skar on his retirement from the U.S. Army Corps of Engineers, Transportation Systems Center, after 34 years of Federal civilian services.

Mr. Skar began his distinguished career with the USACE, Omaha District in 1972 as a Civil Engineer in the Embankments and Special Studies Section, Geotechnical Branch, Engineering Division. In 1981, he became the Lead Design Engineer in the Foundations and Materials Section, Geotechnical Branch and later, in 1988, became Chief of the Section. In 1990, he transferred to the Transportation Systems Center as the Senior Airfield Engineer.

Mr. Skar received numerous letters of appreciation, performance and special act awards, and commendations over his career. Significant contributions include developing rotary wing aircraft mooring point design procedures and guide specifications directed by the Army Chief of Staff; providing exceptional technical support for C-17, B-1, B-2, and F-117A beddown projects; developing Air Force ETL 04-7, C-130, and C-17 Land Zone (LZ) Dimensional, Markings and Lighting Criteria in support of Theater of Operations worldwide; and serving as airfield expert for the Iraq Transportation Sector Contract Development/Selection Team, which received an award from the Deputy Secretary of Defense.

BJ lives in marital bliss with his wife of 31 years, Gretchen, and they have two children, Bryan and Gwenn. Gretchen teaches middle school for the Millard Public Schools. The Skar's celebrated a wedding this summer when their son, Bryan, married Krista. Bryan is currently in dental school in Lincoln, NE. Their daughter, Gwenn, also attends school in Lincoln, but will be transferring to Omaha in August to begin Medical School. BJ will only have one day of retirement, because on 2 February he begins his new career with HDR Inc., in Omaha, as Senior Program Manager for Air Field Pavements.

Congratulations BJ and good luck in your future endeavors!

TSMCX got a Face Lift (in more than one way)

On 22 January 2006, the Transportation Systems Center (TSC) office brightened when Heather Smith joined the team. Heather has been with the Corps for 4 years and was working in the Real Estate Division when the TSC lured her away to join the team.

Heather Smith stays busy at the TSC by assisting with administrative duties and sending members around the world. She really enjoys working with the TSC team and learning about the different corners of the world and learning where facilities are located. Heather is looking forward to meeting the "who's who" and putting names to voices during the Transportation Systems 2008 Workshop.

When she is not working, Heather enjoys spending time with her family and watching Law & Order. She also likes reading and taking her boys, Nathan (age 2) and Ryan (9 months) outside to play.

Welcome aboard Heather!

TSC received a face lift on its website too. The website contains a lot more information and links and it's easy to navigate. Check it out at www.tsmcx.com. Kudos to Amanda Young and Robert Walker, USACE-ERDC, for performing the successful operation.

Newest TSC Team Member, Heather, with her husband, Joel, and their sons, Nathan and Ryan

TRANSPORTATION SYSTEMS CENTER

If you have any questions on transportation systems, let us hear from you.

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