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	Engineering and Design TRANSPORTATION SYSTEMS MANDATORY CENTER OF EXPERTISE	
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DEPARTMENT OF THE ARMY
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CEMP-ET

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Engineer Regulation
No. 1110-34-1

10 January 1990

Engineering and Design
TRANSPORTATION SYSTEMS
MANDATORY CENTER OF EXPERTISE

1. Purpose. This regulation sets forth authority, policy, and responsibilities of the HQUSACE Transportation Systems Mandatory Center of Expertise (TSMCX). The TSMCX is established to support engineering, planning, design, construction, evaluation, criteria development, and real property requirements for all military transportation systems. Transportation systems include airfields; railroads; roads; streets; ports; non-organizational parking; organizational vehicle parking; special vehicle guideways, and roadways; and all facilities directly in support of transportation vehicles.

2. Applicability. This regulation is applicable to all HQUSACE/OCE elements and field operating activities (FOA) having Army and Air Force construction, planning and design responsibility.

3. References.

a. AR 420-72

b. ER 1110-1-262

c. ER 1110-3-107

d. ER 1110-3-108

4. Policy. The engineering of military transportation systems is a highly specialized field and is critical to the security and readiness of the Nation. To maintain this capability and expertise within the Corps of Engineers, all HQUSACE/OCE elements and FOA having military construction, planning, design, and mobilization responsibilities shall have the engineering resources to support military transportation systems construction, planning, and design. To maintain highly skilled advanced transportation systems technical expertise within the Corps of Engineers, the TSMCX shall be established. The TSMCX is also established to provide continuity, standardization, and technical excellence within the Corps and to satisfy customer requests. Therefore, all U.S. military transportation systems designs for airfields; railroads; ports; and special vehicle guideways, and roadways shall be reviewed by the TSMCX. Unless specifically requested, military transportation systems designs for roads, streets, organizational

vehicle parking, non-organizational parking, and all facilities directly in support of transportation vehicles will not be reviewed by the TSMCX.

5. TSMCX Charter. Appendix A of this regulation defines the specific charter of the TSMCX. ER 1110-1-262, Corps-wide Technical Centers of Expertise Assigned to Divisions and Districts, defines the general functions of technical centers of expertise. The Chief of Engineering Division, Directorate of Military Programs, may revise Appendix A by issuance of memoranda to all HQUSACE/OCE elements and field operating activities (FOA) having military construction, planning and design responsibility.

FOR THE COMMANDER:

ALBERT J. GENETTI, JR.
Colonel, Corps of Engineers
Chief of Staff

APP A - Charter for the Transportation Systems Mandatory Center of Expertise

APPENDIX A

CHARTER OF THE TRANSPORTATION SYSTEMS MANDATORY CENTER OF EXPERTISE

1. Authority. As defined in this appendix, the TSMCX shall serve as an arm of the Directorate of Military Programs.

2. Responsibilities.

a. HOUSACE/OCE.

(1) The Chief of Engineering Division, Directorate of Military Programs, is responsible for assigning resources to the TSMCX and defining the mission of the TSMCX. The Chief of Engineering Division shall annually assess the TSMCX functions and field mission requirements. The Chief of Engineering Division can modify TSMCX Implementation Plan to meet current mission requirements and operate within resourced allocations.

(2) HOUSACE (CEMP-ET) is the action office responsible for the technical and administrative oversight of the HQUSACE Transportation Engineering Systems Mandatory Center of Expertise. CEMP-ET is the Army proponent for criteria, guidance and waivers related to the following: planning, design, and evaluation of U.S. Army Airfields and Military Ports; planning, design and structural evaluation of U.S. Army railroads, roads, streets, walks, organizational vehicle parking, non-organizational vehicle parking, and open storage pavements; U.S. Army and Corps of Engineers engineering design and evaluation criteria development; Corps of Engineers Guide Specification (CEGS), Mobilization Guide Specifications (MOGS), and Reserve Guide Specifications(CE-R) development; design review of FOA airfield, railroad, and military port designs; and all airfield facility International Standardization Agreements (ISA).

b. HQUSAF. HQ USAF/LEE is the Air Force proponent and coordinator for criteria and guidance related to U.S. Air Force Air Base design, planning, and evaluation; U.S. Air Force engineering criteria development; U.S. Air Force repair and maintenance criteria development; U.S. Air Force railroad design, planning, and evaluation; and TSMCX support directly to the Air Force installations and major commands (MAJCOM). Each Air Force MAJCOM has the authority to issue the TSMCX written waivers to any published Air Force regulation, criteria document, or guidance for U.S. Air Force projects.

c. TSMCX. Each division assigned as a TSMCX is responsible for its TSMCX direct supervision and administration. However, the TSMCX functionally reports to HQUSACE (CEMP-ET). The TSMCX has two elements. The first element is a Mandatory Central Army and Air Force Technical Center of Expertise (TSMCX-C). The second element contains three Regional Mandatory Review Centers (TSMCX-R). These elements are divided functionally as follows:

(1) The Central Army and Air Force Technical Center of Expertise shall be responsible for:

(a) Providing technical support to HQUSACE and HQUSAF.

(b) Providing Corps of Engineers architect-engineer (A-E) task order contracts for transportation systems.

(c) Providing consulting service to all FOA, Army installations and Air Force bases upon request.

(d) Acting as mandatory repository for all Army airfield designs documents.

(e) Establishing the TSMCX Management Plan and a yearly TSMCX Implementation Plan, as defined in paragraphs 13 and 14.

(2) The Regional Mandatory Review Centers shall be responsible for:

(a) Providing mandatory design review of all Army and Air Force airfield designs.

(b) Providing mandatory design review of all Army and Air Force railroad design.

(c) Providing mandatory design review of all Army and Air Force military port design.

(d) Providing mandatory design review of all Army and Air Force special vehicle guideways, and roadways.

d. Division/Districts. Divisions/Districts shall be responsible for the design of all transportation systems within their specific geographical assignments. The divisions/districts have access to the Army•s top technical consultants at the TSMCX upon request. The districts and divisions are required to submit airfield, railroad, and military port transportation systems designs to their TSMCX-R for review as defined in this regulation.

3. TSMCX Assignments.

a. Missouri River Division (CEMRD) is designated the primary Mandatory Central Army and Air Force Technical Center of Expertise (TSMCX-C) for the following:

(1) Providing technical support to HQUSACE and HQUSAF.

(2) Providing consulting services to all FOA, Army installations and Air Force bases upon request.

(3) Administering Corps of Engineers (A-E) task order contracts for transportation systems, as defined in paragraphs 4.b.(2) and 22.

(4) Maintaining the mandatory repository files for all Army airfields.

(5) Establishing an approved TSMCX Management Plan and a TSMCX Implementation Plan, as defined in paragraphs 13 and 14.

(6) Establishing a TSMCX Quality Assurance Plan for TSMCX-R reviews.

b. Missouri River Division (CEMRD) is also designated a Regional Mandatory Review Center (TSMCX-R) for the following:

(1) Performing mandatory design review of all Army and Air Force airfields for all FOA within Missouri River Division (CEMRD), North Atlantic Division (CENAD), New England Division (CENED), and Southwestern Division (CESWD).

(2) Performing mandatory design review of all Army and Air Force CONUS railroads for all FOA within Missouri River Division (CEMRD), North Atlantic Division (CENAD), New England Division (CENED), and Southwestern Division (CESWD).

(3) Performing mandatory design review of all Army and Air Force military special vehicle guideways, and roadways for all FOA within Missouri River Division (CEMRD), North Atlantic Division (CENAD), New England Division (CENED), and Southwestern Division (CESWD).

(4) Assisting CEMRD Mandatory Central Army and Air Force Technical Center of Expertise in establishing a TSMCX Management Plan and a yearly TSMCX Implementation Plan, as defined in paragraphs 13 and 14.

c. North Pacific Division (CENPD) is designated as a Regional Mandatory Review Center (TSMCX-R) for the following:

(1) Performing mandatory design review of all Army and Air Force airfields for all FOA within North Pacific Division (CENPD), Pacific Ocean Division (CEPOD), and South Pacific Division (CESPD).

(2) Performing mandatory design review of all Army and Air Force CONUS and Alaska railroads for all FOA within North Pacific Division (CENPD), Pacific Ocean Division (CEPOD), and South Pacific Division (CESPD).

(3) Performing mandatory design review of all Army and Air Force military special vehicle guideways, and roadways for all FOA within North Pacific Division (CENPD), Pacific Ocean Division (CEPOD), and South Pacific Division (CESPD).

(4) Assisting CEMRD in establishing a TSMCX Management Plan and a yearly TSMCX Implementation Plan, as defined in paragraphs 13 and 14.

d. South Atlantic Division (CESAD) is designated as a Regional Mandatory Review Center (TSMCX-R) for the following:

(1) Performing mandatory design review of all Army and Air Force airfields for all FOA within European Division (CEEUD), Ohio River Division (CEORD), and South Atlantic Division (CESAD).

(2) Performing mandatory design review of all Army and Air Force CONUS railroads for all FOA within Ohio River Division (CEORD), and South Atlantic Division (CESAD).

(3) Performing mandatory design review of all Army and Air Force military special vehicle guideways, and roadways for all FOA within European Division (CEEUD), Ohio River Division (CEORD), and South Atlantic Division (CESAD).

(4) Assisting CEMRD in establishing a TSMCX Management Plan and a yearly TSMCX Implementation Plan, as defined in paragraphs 13 and 14.

e. South Atlantic Division (CESAD) is also designated to perform Mandatory Central Army and Air Force Technical Center of Expertise (TSMCX-C) function for the following:

(1) Performing mandatory design review of all Army and Air Force military port design for all FOA.

(2) Serving as expert consultant for military port design and construction, upon request of CEMP-ET or FOA.

4. Functions, Services and Funding. Funding will be provided by direct reimbursements from TSMCX users and by CEMP-ET from funds received from USAF, the Criteria Up-date Program, the PCASE Program, and other Army programs. The following outlines specific functions, services and funding:

a. HQUSACE (CEMP-ET) shall provide a minimum of one full time civil/transportation systems engineer. The engineer(s) shall be the HQUSACE overseer of the technical and administrative functions of the TSMCX; the senior USACE technical consultant for Army airfields, which includes peace-time, mobilization, and theater-of-operations; the Army technical monitor for all Army airfield evaluation and certification surveys; the developer of Army airfield design, evaluation, and construction criteria; the technical civil engineering proponent for aircraft characteristics relating to take-off, landing, and ground movement operations; the USACE action agent for Army-wide policy for transportation systems design, evaluation, and construction; the USACE action agent to initiate Army-wide standardization policy in the design, evaluation, and construction of Army transportation systems; the USACE representative on joint service and international committees relating to military airfield design, evaluation, and construction; the service proponent of joint service transportation systems criteria and guidance documents; the action agent and technical expert for resolving technical conflicts between USACE transportation systems senior technical specialists; the proponent of all TSMCX criteria documents, and all USACE transportation systems design, evaluation and construction policy; the proponent for all USACE military transportation systems training courses for design, evaluation, and construction; the CEMP-E technical coordinator and monitor for HQUSACE transportation systems military transportation systems research units; the senior USACE transportation systems expert to assess the results of completed research units and to initiate appropriate technology transfer into USACE training courses, criteria documents, and policy; the action agent to identify Army deficiencies in transportation systems design, evaluation, and construction, and to recommend the needed research units, procedures, and policy to correct the deficiencies; and the HQUSACE technical specialist and action agent for coordination with FOA, TSMCX, Army major commands (MACOM), Army Aviation, Headquarters Air Force, Headquarters Navy, Headquarters Marine Corps, Department of Transportation (FAA, FHWA, etc.), Military Transportation Management Command, Transportation Research Board, NATO, ABCA, CEHSC, CEWES, CECRL, CECER, industry, professional societies, local State/Federal/international Government agencies.

b. CEMRD services shall include the following:

(1) One full time civil engineer/transportation systems engineer, when directed and authorized by HQUSACE (CEMP-E), will be assigned the overall TSMCX coordination between HQUSACE, HQUSAF,

and all TSMCX offices. The engineer will oversee the Corps of Engineers transportation systems task order A-E contracts; coordinate TSMCX guidance from HQUSACE/OCE; schedule TSMCX in-progress review meetings; schedule review meetings between TSMCX offices, CEMP-ET, HQ USAF/LEE, FOA, TSMCX users, MACOM, and MAJCOM; and collect all TSMCX resource requirements, and submit to HQUSACE (CEMP-ET). The engineer will be the official point of contact for all official TSMCX action items directly between the Corps of Engineers and the Air Force. Action items between USACE FOA and CESAD or CENPD will not be managed by this engineer. The engineer will be responsible for consolidating the TSMCX yearly Implementation Plans and coordinating any changes with CEMP-ET. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of transportation systems engineering. The funding for the project management will be provided by CEMP-ET with funds received from both the Army and Air Force.

(2) One full time A-E contract administrator, when directed and authorized by HQUSACE (CEMP-E), will be provided to award and manage the all Corps of Engineers task order A-E contracts for airfields, pavements, ports and railroads. One or more FOA-wide architect-engineer (A-E) task order contract(s) will be awarded for airfield and pavement design totaling a maximum of five million dollars per year; these will be one year contracts with options to renew for at least a second year; and will have a maximum task order limit of one million dollars. One or more FOA-wide architect-engineer (A-E) task order contract(s) will be awarded for railroad design totaling a maximum of two million dollars per year; will be a one year contracts with options to renew for at least a second year; and will have a maximum task order limit of one million dollars. These contracts may be used by all FOAs, and CEMP-ET. The contract administration support and the minimum contract award fees will be funded by CEMP-ET with funds received from both the Army and Air Force. The task orders will be funded directly by the requesting FOA or CEMP-ET. The over-all contract administration will be handled by CEMRD, but the requesting FOA will be required to provide a contracting officer•s representative (COR) and a project engineer for each task order issued. The scope-of-work and task order management will be the direct responsibility of the FOA. Additional HQUSACE/OCE FOA task order contracts for transportation systems and the use of the FOA-wide A-E task order contracts is further discussed in paragraph 22.

(3) One full time civil/pavements/materials engineer, when directed and authorized by HQUSACE (CEMP-E), will be provided for paving materials. This engineer will be responsible for updating Army and Corps of Engineers paving materials guide specifications and standard practice manuals for paving materials; monitoring Corps of Engineers research units in paving materials for CEMP-ET; assessing new paving materials developed by industry and providing recommendations for use or non-use by the Army and Air Force;

assessing and consulting on paving materials for war damage repair; developing Corps of Engineers paving materials evaluation and testing procedures; assessing capabilities of Corps of Engineers laboratories in paving materials testing and mixture proportioning; identifying new testing equipment and testing procedures to be used by the Corps of Engineers laboratories; identifying Army and Air Force deficiencies in paving material science and recommending needed research, material adoption, and policy required to correct the deficiencies; and providing Army and Air Force wide consulting services. This engineer will be the Army•s senior expert in paving materials design, application, acceptance, evaluation, testing, and construction. This engineer will represent the Corps of Engineers on a minimum of two national industry technical committees in the area of paving materials. Guidance and funding for this effort will be provided by CEMP-ET with funds received from both the Army and Air Force.

(4) One full time civil/pavements/materials engineer, when directed and authorized by HQUSACE (CEMP-E), will be provided to assist the senior paving materials engineer in flexible and recycled pavements. This engineer will be responsible for updating Army and Corps of Engineers flexible and recycled pavement guide specifications and standard practice manuals for flexible and recycled pavements; assisting in USAF airfield DD Form 1391 review; and providing Army and Air Force wide consulting services. This engineer will be the Army•s senior expert in flexible and recycled pavement design and construction. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of flexible and recycled pavements. Guidance and funding for this effort will be provided by CEMP-ET with funds received from both the Army and Air Force.

(5) One full time civil engineer, when directed and authorized by HQUSACE (CEMP-E), will be provided for pavements in cold regions, pavement aircraft refueling systems, aircraft arresting systems, site grading, storm drainage, subdrainage, and the mandatory design review of all Army and Air Force military special vehicle guideways, and roadways for all FOA within Missouri River Division (CEMRD), North Atlantic Division (CENAD), New England Division (CENED), and Southwestern Division (CESWD). This engineer will be responsible for: updating Army and Corps of Engineers guide specifications and manuals for pavements in cold regions, pavement aircraft refueling systems, site grading, surface drainage, and pavement subdrainage; assisting in USAF airfield DD Form 1391 review; and providing Army and Air Force wide consulting services. Pavement refueling systems for aircraft will only address the hydrant locations and piping system installations under airfield pavements. This engineer will also assist the Army Engineers School in updating their combat engineers manuals for airfields and roads. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee

in the area of drainage and subdrainage. Guidance and funding for this effort will be provided by CEMP-ET with funds received from both the Army and Air Force.

(6) One full time civil/airfield engineer, when directed and authorized by HQUSACE (CEMP-E), will be assigned for coordinating with the Air Force Alaska Command (AAC), the Air Force Logistics Command (AFLC), the Air Force Space Command (AFSPACECOM), Air Force Systems Command (AFSC), Air Force Regional Civil Engineer (AFRCE), the Pacific Air Force (PACAF), the Air Force Training Command (ATC), the Air Force Reserves (AFRES), the Air Force Strategic Air Command (SAC), the Air Force Tactical Air Command (TAC), the Air Force Military Airlift Command (MAC), the United States Air Forces Europe (USAFE), and all miscellaneous Air Force Airfields located in CONUS, Africa, Middle-East, South-East Asia, Central America, and South America. This engineer will: coordinate the review of preliminary USAF DD Form 1391s selected by the MAJCOM; oversee the performance of all requested visual USAF site surveys; provide recommended design options; prepare a design scope-of-work; list design criteria to be used; identify all USAF waivers to be obtained; coordinate the preparation of a revised rough order of magnitude (ROM) DD Form 1391 Current Working Estimate; and coordinate the design review of Air Force airfields for all FOA within Missouri River Division (CEMRD), North Atlantic Division (CENAD), New England Division (CENED), and Southwestern Division CESWD). This engineer will also provide Air Force wide airfield consulting services; and coordinate HQUSAF quality assurance (QA) inspections during construction when requested. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of airfield pavements. The funding for this effort will be provided by CEMP-ET from Air Force funding, and reimbursements by the FOA for the design review as defined in paragraph 6.

(7) One full time civil/airfield engineer will be provided, subject to the availability of funds, to assist the HQUSACE transportation systems engineer for Army Airfields and Heliports. This engineer will review FOA designs for Army airfield pavements within Missouri River Division (CEMRD), North Atlantic Division (CENAD), New England Division (CENED), and Southwestern Division CESWD); develop and issue Army-wide Army airfield Standardization Guidance for TSMCX-R design reviews; provide one-stop consulting service to FOAs and Army installations; and be responsible for updating Army and Corps of Engineers guide specifications and manuals for Army airfield design. This position will monitor the airfield engineering certification surveys directed by CEMP-ET. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of airfield design. Funding for FOA Army airfield design review will be provided by CEMP-ET, and reimbursed by the FOA as defined in paragraph 6. Funding for criteria development and one-stop consulting service to FOAs will be provided by CEMP-ET. Funding

for one-stop consulting service to Army installations will be provided by CEMP-ET with funds received from the installation requesting this service. Based on the Army's actual requirements for this mission, additional positions and resources for this effort may be authorized and directed by the Chief, Engineering Division, Directorate of Military Programs (CEMP-E).

(8) One full time civil engineer, when directed and authorized by HQUSACE (CEMP-E), will be provided to assist the TSMCX airfield engineer for the Army airfields. This position will maintain the USACE/Army computer files for airfield certification surveys on an approved Computer Aided Drafting and Design (CADD) system and on an approved personal computer (PC) word processor; support with computer aided design and drafting; and assist in monitoring the airfield engineering certification surveys; and maintain computer files . These surveys will include but are not limited to a 10 nautical mile airspace obstruction chart, runway plans and profiles, an airfield layout plan and contours, an airspace utilization plan, a ground airfield/heliport clear zone chart, and an airfield/heliport lighting and marking survey. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of airfield design. Funds for this effort will come from CEMP-ET, and direct reimbursements by the requesting Army element for the airfield certification surveys.

(9) One full time civil/pavements engineer will be provided, subject to the availability of funds, to manage the Pavements-Transportation Computer Assisted Structural Engineering (PCASE) Program and the TSMCX-C Transportation Systems Technical Library. This expertise will coordinate PCASE activities, issue updates of programs to the field, and assist FOAs in implementing PCASE programs. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of computer aided design. Funding and guidance for this effort will be provided by CEMP-ET through the PCASE bill back funding line item. Paragraph 7 outlines the PCASE activities. Paragraph 21 outlines the Transportation Systems Technical Library requirements.

(10) One full time civil/railroad engineer will be assigned, subject to the availability of funds, consultive services and design review for Army and Air Force railroads. This engineer will review all FOA designs for military railroads within Missouri River Division (CEMRD), North Atlantic Division (CENAD), New England Division (CENED), and Southwestern Division (CESWD); provide one-stop consulting service to FOAs, Army installations, and Air Force installations; and be responsible for updating Army, Air Force, and Corps of Engineers guide specifications and manuals for railroad design, evaluation, and planning. This engineer will be the Army's senior expert in railroad design and construction. This engineer will represent the Corps of Engineers on a minimum of one national

industry technical committee in the area of railroad engineering. The funding for this effort will be provided by CEMP-ET from Army funding, and reimbursements by the FOA for the design review as defined in paragraph 6.

(11) One full time civil/cost engineer, when directed and authorized by HQUSACE (CEMP-E), will be provided to assist the railroad engineer, and perform the cost estimates for the USAF transportation systems DD Form 1391 reviews. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of railroad engineering. Funding for this effort will be provided by CEMP-ET with funds received from the Air Force.

(12) One full time civil/airfield engineer, when directed and authorized by HQUSACE (CEMP-E), will be provided for airfield lighting, marking, and navigational aids (NAVAIDS). This engineer will be responsible for updating Army and Corps of Engineers guide specifications and design manuals for airfield lighting, marking, and navigational aids (NAVAIDS); assisting in USAF airfield DD Form 1391 review; assist in the Army airfield design review; managing the HQUSACE Army airfield Standardization Program; and providing Army and Air Force wide consulting services. This engineer will be the Army• s senior expert in airfield lighting, marking, and NAVAIDS. Airfield lighting and NAVAIDS expertise will only include systems selection and site layout, and will not include power distribution design. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of airfield lighting, marking, and NAVAIDS. Guidance and funding for this effort will be provided by CEMP-ET with funds received from both the Army and Air Force. Based on the Army• s actual requirements for this mission, additional positions and resources for this effort may be authorized and directed by the Chief, Engineering Division, Directorate of Military Programs (CEMP-E).

(13) One full time civil/pavements engineer will be provided, subject to the availability of funds, for structural pavement design and evaluation. This engineer will be responsible for updating Army and Corps of Engineers structural pavement design manuals; monitoring Corps of Engineers research units in structural pavement design and evaluation for CEMP-]ET; assessing new structural pavement design and evaluation procedures for use or non—use by the Army and Air Force; assessing and consulting on structural pavement design and evaluation in theater-of-operations; developing Corps of Engineers pavement structural evaluation and testing procedures; assessing capabilities of Corps of Engineers laboratories in structural pavement evaluation and testing; identifying new structural pavement evaluation testing equipment and procedures to be used by the Corps of Engineers; identifying Army and Air Force deficiencies in structural pavement design and evaluation, and recommending needed research units, procedures, and

policy required to correct the deficiencies; developing the new mechanistic design and evaluation procedures and identify technology transfer and training requirements; and providing Army and Air Force wide consulting services. This engineer will be the Army•s senior expert in structural pavement design, evaluation, and construction and lead the development for the Army and Air Force mechanistic structural pavement design and evaluation procedures. This engineer will represent the Corps of Engineers on a minimum of two national industry technical committee in the area of pavement design and evaluation. Guidance and funding for this effort will be provided by CEMP-ET with funds received from both the Army and Air Force.

(14) One full time civil/transportation systems engineer will be assigned, subject to the availability of funds, as the Chief of the TSMCX. This position shall have the CEMRD administrative and supervisory responsibilities for the TSMCX-C. This position shall coordinate TSMCX policy and requirements with HQUSACE (CEMP-ET). This position shall supervise the day-to-day operations of the TSMCX-C and insure adherence to the approved TSMCX Management Plan and a yearly Implementation Plan. This engineer will represent the Corps of Engineers on a minimum of one national industry technical committee in the area of transportation systems engineering. This engineer shall have HQUSACE Transportation Systems Mandatory Center of Expertise signature authority as outlined in paragraph 23. The funding for this position will be funded out of the funds received for the TSMCX-C services.

(15) One full time secretary will be provided, subject to the availability of funds, to perform the both the TSMCX-C clerical and library support functions. The funding for this position will be funded out of the funds received for the TSMCX-C services.

(16) One full time editor/typist, when directed and authorized by HQUSACE (CEMP-E), will be provided to perform the TSMCX-C editing/typing support functions. The funding for this position will be funded out of the funds received for the TSMCX-C services.

(17) CEMRD is responsible for maintaining transportation systems material testing, topographic survey, and geotechnical investigation expertise within their division laboratory and engineering division. Division laboratory services will be funded on the division laboratory•s established reimbursable schedule. Funding for any topographic surveys and geotechnical investigations will be on an individual reimbursable basis.

c. CENPD will provide a minimum of two civil/pavements/ transportation systems engineers whose services shall include the following:

(1) Engineering expertise for the mandatory design review of all Army and Air Force airfields for all FOA within North Pacific Division (CENPD), Pacific Ocean Division (CEPOD), and South Pacific Division (CESPD). Funding for the design review will be provided in accordance with paragraph 6.

(2) Engineering expertise for the mandatory design review of all Army and Air Force CONUS and Alaska railroads for all FOA within North Pacific Division (CENPD), Pacific Ocean Division (CEPOD), and South Pacific Division (CESPD). Funding for the design review will be provided in accordance with paragraph 6.

(3) Engineering expertise for the mandatory design review of all Army and Air Force military special vehicle guideways, and roadways for all FOA within North Pacific Division (CENPD), Pacific Ocean Division (CEPOD), and South Pacific Division (CESPD). Funding for the design review will be provided in accordance with paragraph 6.

(4) Engineering expertise to assist CEMRD support to HQUSACE and HQUSAF. Funding will be provided by direct reimbursements from CEMRD.

(5). CENPD is responsible for maintaining transportation systems material testing within their division laboratory. Division laboratory services will be funded on the division laboratory• s established reimbursable schedule.

d. CESAD will provide a minimum of two civil/pavements/ transportation systems engineers whose services shall include the following:

(1) Engineering expertise for the mandatory design review of all Army and Air Force airfields for all FOA within European Division (CEEUD), Ohio River Division (CEORD), and South Atlantic Division (CESAD). Funding for the design review will be provided in accordance with paragraph 6.

(2) Engineering expertise for the mandatory design review of all Army and Air Force CONUS railroads for all FOA within Ohio River Division (CEORD), and South Atlantic Division (CESAD). Funding for the design review will be provided in accordance with paragraph 6.

(3) Engineering expertise for the mandatory design review of all Army and Air Force military special vehicle guideways/roadways for all FOA within European Division (CEEUD), Ohio River Division (CEORD), and South Atlantic Division (CESAD). Funding for the design review will be provided in accordance with paragraph 6.

(4) Engineering expertise for the mandatory design review of all Army and Air Force military ports for all FOA.Funding for the design review will be provided in accordance with paragraph 6.

(5) Upon request of CEMP-ET or FOA will serve as expert consultant for military port design and construction. This expertise will be responsible for updating Army and Corps of Engineers military port design manuals, and providing Army and Air Force wide consulting services. Funding for this effort will be strictly reimbursable by CEMP-ET, FOA, MACOM, HQUSAF, MAJCOM, Army installation, or Air Force Base.

(6) Engineering expertise to assist CEMRD support to HQUSACE and HQUSAF. Funding will be provided by direct reimbursements from CEMRD.

(7). CESAD is responsible for maintaining transportation systems material testing within their Division Laboratory. Division Laboratory services will be funded on the Division Laboratory• s established reimbursable schedule.

5. Structural Design and Structural Evaluation. Each HQUSACE/OCE element, FOA, and TSMCX shall perform pavement and railroad structural design and structural evaluations, in accordance with the Army and Corps of Engineers published guidance, procedures, policy, and criteria manuals developed by CEMP-ET. Any deviations from these published criteria and guidance documents for Army projects initiated by HQUSACE/OCE elements, FOA, or TSMCX must have a waiver approval from CEMP-ET. Army airfield pavement designs performed by HQUSACE/OCE elements, FOA, or TSMCX must comply with ER 1110-3-107, Design of Military Airfield Pavements. Army airfield pavement evaluations performed by HQUSACE/OCE elements, FOA, or TSMCX must comply with ER 1110-3-108, Evaluation of Military Airfield Pavements.

6. Design Reviews.

a. Mandatory Design Review. All HQUSACE/OCE elements and FOA performing any type (Military Construction Army [MCA], Military Construction Program [MCP], Operations and Maintenance Army [O&MA], USAF Operations and Maintenance [O&M], etc.) of Army or Air Force airfield, railroad, or military port design shall have the design reviewed at all design stages by their TSMCX-R. The TSMCX-R design review may replace the division/district technical civil engineering design review for airfields, railroads, pavements and ports. The design review efforts of the TSMCX for Air Force projects shall be reimbursed by the FOA doing the design. The design review efforts of the TSMCX for Army projects will be funded by a HQUSACE (CEMP-ET).

b. Optional Design Review. Non-Army or non-Air Force airfield, railroad, military port, or special vehicle system design

(such as foreign military sales) will only be reviewed by the TSMCX-R, when designated on the DD Form 1391, or requested by design FOA or HQUSACE. Any Army Director of Engineering and Housing (DEH) or Air Force Base Civil Engineer (BCE), may request the TSMCX-C to review their in-house design. The design review efforts of the TSMCX-R and TSMCX-C will be reimbursed by the FOA, DEH, or BCE doing the design.

7. PCASE Activities. PCASE is established to computerize the complex pavement and transportation systems structural engineering calculations contained in U.S. Army and Corps of Engineers criteria and guidance documents. PCASE activities include:

a. Establishing a PCASE committee for conducting computer program review; establishing FOA field testing and validation procedures for each computer program; and recommending to CEMP-ET implementation or non-implementation of the computer program Corps-wide. CEMRD, CENPD, CESAD, and CEWES will assign a member to the PCASE committee. CEMP-ET will provide the PCASE committee chairman. CEMP-ET will appoint two FOA design engineers as the sixth and seventh PCASE Committee members.

b. Overseeing the development of the PCASE computer programs.

c. Standardizing all PCASE computer program formats.

d. Providing recommendations to CEMP-ET for the development of new PCASE computer programs.

e. Preparing manuscripts of Corps of Engineers engineer technical letters (ETLs), Army technical manuals (TMs), and Corps of Engineers engineer manuals (EMs) for official PCASE computer program FOA and Army issuance.

f. Developing and maintaining the Corps of Engineers design guide for computerized pavement design, pavement evaluation, railroad design, railroad evaluation, non-destructive testing (NDT), and depth of frost design. Each PCASE computer program shall have one chapter contained in this design guide. The chapter will contain a description of the program; a computer listing of the program; and a narrative which includes all technical assumptions and formulas that the computer program uses. The ETLs, TMs, and EMS will only instruct the user as to how to use the computer program, and not address the computer listing and technical calculations embedded within the program.

g. Acting as point of contact for assisting the FOA PCASE users in the implementation and use of the PCASE programs.

8. Vertical Take-off and Landing (VTOL) Airfield Design. CEMP-ET will retain the technical expertise to develop VTOL airfield design.

9. Waiver Policy and Procedures.

a. This Regulation. Requests for waivers to this regulation must be submitted in writing to CEMP-ET. The Chief, Engineering Division, Directorate of Military Programs has the authority to approve waivers to this regulation. Issuance of the official approved or denied waiver request shall be the responsibility of CEMP-ET.

b. U.S. Army Projects. Request for waivers of U.S. Army published planning, design, and evaluation criteria and guidance must be submitted in writing to CEMP-ET through their TSMCX-R and the TSMCX-C. CEMP-ET will staff all waiver requests through the appropriate approval authorities. Issuance of the official approved or denied waiver request shall be the responsibility of CEMP-ET. All approved waivers for the project shall be included in the appropriate planning document, design analysis, or evaluation report.

c. U.S. Air Force Projects. All waivers of U.S. Air Force published planning, design, and evaluation criteria, regulations, and guidance shall be included in the project design scope-of-work provided by the USAF. In some cases, the TSMCX will assist the USAF in scope-of-work preparation. Waivers not previously included in the project design scope-of-work shall be requested and approved as follows:

(1) USACE FOA & TSMCX Initiated Requests. All HQUSACE/OCE elements, FOA, and TSMCX initiating requests for waivers of published U.S. Air Force planning, design, and evaluation criteria, regulations, and guidance must be submitted in writing to the appropriate MAJCOM through their TSMCX-R, the TSMCX-C, CEMP-ET, and HQ USAF/LEE. The MAJCOM will staff all waiver requests through the appropriate waiver approval authorities and issue a written waiver approval or denial directly to the TSMCX-C. The TSMCX-C will provide the, FOA, the TSMCX-R, CEMP-ET, and HQ USAF/LEE copies of the written waiver approval or denial. All approved waivers for the project shall be included in the appropriate planning document, design analysis, or evaluation report.

(2) USAF Activity Requests. Any USAF base, activity, agency, AFRCE, or MAJCOM representative requesting any HQUSACE/OCE elements, FOA, or TSMCX to waive any U.S. Air Force published planning, design, and evaluation criteria, regulations, and guidance must provide the TSMCX-C with a signed written waiver from the overseeing MAJCOM. The TSMCX-C will provide the FOA, TSMCX-R, CEMP-ET, and HQ USAF/LEE copies of the written waiver approval or denial. Otherwise, the HQUSACE/OCE element, FOA, TSMCX-R,or TSMCX-C shall not waive the criteria. All approved waivers for the project shall be included in the appropriate planning document, design analysis, or evaluation report.

10. Use of Division Laboratories. All HQUSACE/OCE elements, and FOA shall use their local division laboratory for all non-research transportation systems requirements in order to support the retention of Army transportation systems laboratory expertise. Should the local division laboratory be unable to support the specific transportation systems requirements, then the HQUSACE/OCE elements and FOA shall use the CEMRD, CENPD or CESAD division laboratories. However, private laboratories or on-site Government laboratories may be utilized for quality assurance during construction, when inspected and approved.

11. Project Documents. Design Review Comments, and TSMCX Design.

a. Project Documents.

(1) Design and Planning Documents. Within 7 days of receipt by the FOA, each FOA shall submit one copy of all authorized DD Form 1391s and all project scopes-of-work involving any airfield, military port, or railroad engineering to their TSMCX-R. Within 7 days of receipt of each design submittal phase, each FOA shall submit two copies of all plans, specifications, and design analysis involving any airfield or railroad engineering to their designated TSMCX-R.

(2) Army Airfield Documents. Within 7 days of receipt by the FOA, each FOA shall submit one copy of all final Army airfield design documents (design analysis, drawings, specifications, geotechnical reports, pavement evaluation reports, etc.) to the TSMCX-C; and one copy of all Army airfields as-built drawings to the TSMCX-C. As built drawing are mandatory for all Army airfields that any FOA designs and constructs.

b. Design Review Comments. Within 21 days of the receipt of any design review comments, each FOA shall submit one copy of all annotated review comments to their designated TSMCX-R. Should the FOA take exception to any TSMCX-R design review comment and the TSMCX-R is unwilling to withdraw this unresolved comment, the TSMCX-R will submit a narrative to CEMP-ET stating the reasons that the FOA is taking exception to the comment and its reasons for not withdrawing the comment; and CEMP-ET will issue the technical direction.

c. TSMCX Design. The TSMCX is not authorized to perform a design for any division or district.

12. Consulting Services. Any FOA can request a one-stop consulting service from the TSMCX-C. These FOA services requested for U.S. Army or U.S. Air Force are normally funded by CEMP-ET. USAF Base requests, U.S. Army installation requests, and FOA foreign military sales (FMS) services will be on a reimbursable

basis. One-stop consulting services are defined as transportation systems field problems for which any Army or Air Force element can request an expert•s assistance. One-stop consulting services are defined as not to exceed one day. All HQUSACE/OCE elements, FOA, and Air Force elements can request TSMCX-C services. All non-research Corps of Engineers consulting services and one-stop requests for transportation systems engineering and materials shall be directed to the TSMCX-C. All FOA are encouraged to use this consulting service.

13. TSMCX Management Plan. CEMRD, CENPD and CESAD shall establish a joint TSMCX Management Plan to be approved by the Director of Military Programs (CEMP-ZA). This plan shall include the TSMCX management and operation plans, and the TSMCX quality assurance/ technical review plans. CEMP-ET is responsible for HQUSACE staff coordination of the management plan.

14. TSMCX Implementation Plan. CEMRD, CENPD and CESAD shall establish a yearly TSMCX Implementation Plan to be approved by the Chief of Engineering Division, Directorate of Military Programs. This plan will outline the TSMCX action plan to meet the specific mission assignments of each fiscal year. CEMP-ET is responsible for HQUSACE staff coordination of the implementation plan.

15. FOA and TSMCX Points of Contact.

a. By 1 September of each year, all HQUSACE/OCE elements, FOA, and TSMCX-R shall provide the TSMCX-C with the following:

(1) A point of contact for transportation systems engineering for their office including name, phone numbers (commercial and AUTOVON), and mailing address.

(2) A list of all transportation systems engineers currently performing designs or evaluations in their office including name, transportation systems expertise, office symbol, and phone number in order to provide criteria and guidance distribution plus assess Corps—wide training requirements.

(3) A list of next years expected projects requiring TSMCX-R design review including the month(s) in which the project will be submitted to the TSMCX-R.

b. By 1 October of each year, the TSMCX-C will prepare an engineer circular (EC) which will expire on the following 30 September. This EC is to be distributed to each FOA, MACOM, MAJCOM and HQ USAF/LEE and shall list the following:

(1) The official transportations systems points of contact for each HQUSACE/OCE elements, FOA, each TSMCX-R, and the TSMCX-C including name, phone numbers (commercial and AUTOVON), and mailing address.

(2) The TSMCX-R and TSMCX-C staff including name, transportation systems expertise, office symbol and phone number.

(3) Specific activities for the upcoming fiscal year for each TSMCX-R and the TSMCX-C.

c. By 1 November of each year, the TSMCX-C shall publish a current directory of all HQUSACE/OCE elements, FOA, TSMCX-R, and TSMCX-C transportations systems engineers including name, transportation systems expertise, office symbol, and phone number.

16. Criteria Up-date. The TSMCX-C will develop the criteria and guidance documents as tasked by HQ USAF/LEE, CEHND, or HQUSACE (CEMP-E) as outlined in scope-of-work and directives. In order to nurture the transportation systems engineering expertise within the Department of Defense (DOD), all criteria up-date work units should emphasize the use of Army, Air Force, or Navy in—house experts. The use of non-DOD experts for development of transportation systems criteria documents must be approved by the HQUSACE proponent. The TSMCX will have the technical responsibility for the document•s preparation. Huntsville Division (CEHND) will have the overall administration responsibility including: review, technical editing, funds distribution, format, and preparation policy for the documents. HQUSACE (CEMP-ET) will have Corps of Engineers and Army policy responsibility and final technical and administrative approval for the actual publishing of the document. Any draft submittal shall have all review comments incorporated and resolved prior to their submission to HQUSACE (CEMP-ET) or HQ USAF/LEE for review. Any unresolved review comments will be submitted to the HQUSACE or HQ USAF/LEE proponent for resolution prior to submitting the draft for review. Each scope-of-work shall identify the action agents responsible for review of the document and identify the HQUSACE submittal requirements.

17. Design or Project Deficiencies. All transportation systems Design or Project Deficiency Report and Recommendations (ENG Form 3078) submittals will be reviewed and answered by the TSMCX-C.

18. O&MA Projects. As a part of all design reviews performed by a TSMCX-R, the TSMCX-R shall insure that:

a. The selected design options have considered the installation•s overall management plan, life cycle cost, and automated facilities management systems such as PAVER and RAILER.

b. All design considerations for O&MA pavements and railroads are in accordance with AR 420-72, Facilities Engineering - Pavements, Railroads, Bridges and Associated Appurtenances.

19. Research and Development. Upon the request and direction of the HQUSACE (CEMP-ET), the TSMCX-C will review and monitor Research Development, Testing and Evaluation (RDT&E) work units for which CEMP-ET is assigned as the technical monitor. In addition, the TSMCX-C shall identify all needed RDT&E work units required for the improvement and the development of criteria up-date documents.

20. Training. Each TSMCX-R and TSMCX-C engineer shall be an instructor in a minimum of one of the Corps of Engineers training courses relating to transportation systems engineering and construction.

21. Transportation Systems Technical Library.

a. TSMCX-R. Each TSMCX-R is responsible for establishing and maintaining a Transportation Systems Technical Library. Each TSMCX-R shall insure that their Transportation Systems Technical Library is kept both current and complete. As a minimum, the library will contain the following:

(1) One current copy of all railroad planning, design, evaluation, construction, and maintenance criteria and guidance documents for airfields, ports, roads, and airfields published by the Federal Aviation Administration (FAA), the Federal Railway Administration (FRA), Department of Defense (DOD), Department of Army (USA), Department of Air Force (USAF), Department of Navy (USN), United States Marine Corps (USMC), United States Coast Guard (USCG), Military Transportation Management Command (MTMC), North Atlantic Organizational Treaty (NATO), American, British, Canadian and Australian Armies (ABCA), International Civil Aviation Organization (ICAO), American Railway Engineering Association, and recognized national industry organizations.

(2) Ten current copies of all computer programs, criteria and guidance documents related to transportation systems which CEMP-ET and CEHSC are proponents. These copies will be distributed to any FOA or DEH upon request.

(3) Two copies of all USA and USAF airfield pavement evaluation reports.

(4) One copy of all documents, test procedures, etc. which are referenced in CEMP-ET and CEHSC transportation systems criteria and guidance documents.

b. TSMCX-C. In addition to the TSMCX-R Transportation Systems Technical Library requirements, the TSMCX-C library shall also contain:

(1) Two copies of all CEWES, CECRL and CECER miscellaneous papers and research reports relating to transportation systems.

(2) The official HQUSACE criteria guidance document historical files for each document related to transportation systems for which CEMP-ET is the proponent.

(3) The official HQUSACE Army airfield document repository files for all Army airfields.

22. FOA-Wide A-E Task Order Contracts. Air Force O&M projects, Army O&MA projects, and several priority MCP and MCA projects have very short lead times allowed to select an architect engineer firm, award the A-E design contract, prepare the design, and award construction contract. To reduce the time required for the architect engineer firm selection and award of the A-E design contract, pre-awarded A-E task order contracts can be established. In order to maintain a constant work load and reduce the number of FOA task order contracts; airfield design, pavement design and railroad design FOA-wide A-E task order contracts will be awarded and maintained by the TSMCX-C for use by any FOA. The FOA is not required to use these contracts, but may use them to facilitate meeting Army, Air Force, and FOA design schedules or obtain an A-E with strong transportation systems expertise. These contract will be awarded and administered by the TSMCX-C; but the task order administration will be managed by the appointed FOA contracting officer•s representative and the FOA project manager. All HQUSACE/ OCE elements, and field operating activities (FOA) requiring any A-E task order contract(s) relating to airfields, pavements, ports, or railroads shall use the TSMCX-C to the award the contract and provide overall contract administration of for the contract. Other than the TSMCX-C, no HQUSACE/OCE element or field operating activity (FOA) shall be authorized to award any A-E task order contract relating to airfields, pavements, ports, or railroads.

23. TSMCX Correspondence.

a. All correspondence to HQ Air Force,HQ Navy, Congress, other Federal agencies, and industry will be sent through CEMP-ET. CEMP-ET will revise and staff the correspondence, as required.

b. All correspondence originated by the TSMCX-C directed to any HQUSACE/OCE element, field operating activity (FOA), MACOM, or MAJCOM shall be signed by the Chief of the TSMCX-C, and have the following signature block:

CHIEF•S NAME IN CAPITALS
Chief,
HQUSACE Transportations Systems
Mandatory Center of Expertise

c. All correspondence originated by the CEMRD, CENPD and CESAD TSMCX-R directed to any HQUSACE/OCE element or field operating activity (FOA) shall be signed by the Chief of their Engineering Division, and have the following signature block:

CHIEF•S NAME IN CAPITALS
Chief,
Regional Mandatory Review Center
HQUSACE Transportations Systems
Mandatory Center of Expertise