

Document created: 17 August 01

# **Global Operational Environmental Review (GOER) Process**

**by**

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Air Force Special Operations Command (AFSOC) is forging a new automated environmental planning tool for use by mission commanders, planners, operators, and environmental professionals for overseas operations. The GOER is an environmental tool with operational attitude that will give the user an automated comprehensive assessment of the mission, identify environmental concerns and provide mitigating actions. The user simply inputs basic routine planning inputs such as date, location, equipment, and duration and flight altitudes and GOER can do the rest.

GOER is a unique, GIS-based computer system with powerful information processing capabilities and embedded logic for analysis. It synthesizes mission profiles, and requirements along with environmental requirements by sorting through extensive databases comprised of the following: world wide biomes, laws, Unit Type Code (UTC), mission profiles, cultural resource, pests and disease vectors, and unclassified NIMA GIS imagery and charts. GOER identifies potential environmental impacts, predicts environmental affects on the operation, suggests mitigating alternative courses of actions, and identifies theater and country specific legal concerns. Products include short concise executive summaries, constraint maps, comprehensive environmental review reports, and an overview of pertinent laws.

The system was developed to provide a required (DODD 6050.7) environmental review capability to be accomplished on short notice in a secure or deployed location, but can be

expanded to meet all routine mission, and exercise planning. This capability will allow the user to analyze multiple mission scenarios to identify the best parameters that adhere to overseas constraints, while meeting the mission objective. The system is being created utilizing open architecture. Because of this, it will be capable of becoming the horizontal integration tool for other operational logistical and civil engineering planning programs.

Presently, operational environmental planning for deployed forces is conducted sporadically, or not at all. Executive Order 12114 and DOD Directive 6050.7 and AFI 32-7006 require DOD to review the probable environmental impacts of proposed activities overseas. To adequately comply with these environmental review requirements prior to conducting the mission, AFSOC and the rest of DOD must consider environmental impacts during deployment and exercise planning.

A major problem in achieving compliance is that AFSOC's small, light force structure lacks organic civil engineering (CE) support on deployments. Within the Air Force structure, CE typically leads in preparing the environmental impact analysis. The additional burden that environmental planning places on AFSOC's operational and planning communities, ensures the environmental reviews are rarely conducted. Traditionally, environmental reviews require a multidisciplinary team of professional scientists, engineers and attorneys to prepare. The review process is expensive and slow. The GOER process is based upon existing operator, planner, logistics, and attorney inputs. The environmental analysis is part of the embedded logic. The result is a virtual multidisciplinary team.

GOER provides operational, logistical, maintenance, civil engineering, legal personnel, and commanders, with long and short range planning data to assess the impact of a given mission or exercise on the environment in the area of operations. It identifies country specific legal requirements at the deployment zone, and it is designed to be easy to use for both preparing environmental reviews, and as planning tool for use by non-environmental professionals.

With GOER, operators, mission planners and logisticians can account for anticipated mission related environmental issues within minutes. The GOER analyzes the area of operations environment to determine what affects are likely to occur to personnel, equipment, and mission activities. Good environmental planning can prevent some major problems downrange. For example; GOER identifies poisonous insects or reptiles that may reside in the area of operation; identifies that the planned location of the base of operation is in a wetland, or flood plain during the rainy season and subject to a washout. It identifies the location of shifting sands that may impact low level flight paths (only if the mission includes these flights over these areas), and points of cultural significance that the mission may impact. Environmental planning information can prevent DOD from placing bivouac camps in dangerous flood plains, prevent the scheduling of low-level flight activities over fragile, endangered species habitat during nesting periods, or avoid conducting aerial refueling operations over drinking water sources such as reservoirs.

The system outputs include the following: a Commander's Summary report, Constraint Maps, a comprehensive Environmental Review report, and an environmental law overview.

First, the Commander's Summary report is a short, concise report that identifies constraints, and suggests mitigating alternatives. The Commander's Summary report provides a quick overview of mission environmental impacts by subject area, and impacts to the operation. Set in a tabular matrix, the report includes a color-coded red, yellow and green summary for planners and operators of probable mission impacts to various environmental media or to the operation. Red indicates a strong probability of adversely impacting the environment or exceeding a legal or regulatory threshold. Yellow indicates the potential of impacts to the environment, but with proper planning the effect could be mitigated or eliminated. Green means there are no overriding environmental or legal constraints. The report also suggests possible mitigating alternative actions.

Secondly, GOER produces constraint maps depicting environmental and mission obstacles, or concerns. The map

flags areas where activities may either impact the environment, or where the environment may impact a mission activity. The flagged map areas correspond to potential impacts identified in the commander's summary report.

**The third product produced by GOER is a comprehensive, legally defensible, NEPA-like Environmental Review (ER) report detailing the results of the environmental review. ERs are conducted in order to identify potential mission impacts to the environment to be used in the planning of a specific mission. ERs can take anywhere from one day to six months, or more, to completed, depending on the mission parameters- duration, number of units, types of units, location, type of mission. The ER encompasses the review of endangered/threatened species, cultural, plants, air, water, etc. Thus, ERs require the expertise of a number of different disciplines, and can add a significant cost to the overall Air Force budget.**

**Finally, GOER provides a regulatory overview of laws and regulations pertinent to the environmental aspects of the mission. The report is a list of international, DOD and host nation laws with legal citations. Planners can use the list to prepare for specific environmental laws governing the deployment.**

### **Expected DOD Benefit:**

**The environmental impacts of military action are increasingly under scrutiny in the world arena. Currently, DOD has limited capability to quickly analyze and review the potential environmental/legal impact of a deployment or mission. Consequently, short notice deployments or missions are not getting evaluated for potential adverse environmental impacts prior to execution. Without conducting these reviews, DOD and the Air Force potentially expose the United States to a risk of violating treaties, United States federal law, executive agreements and orders, and/or host country laws.**

**Currently, GOER can only analyze those operations conducted by AFSOC units in the CENTCOM Theater. Within two years it should have full global capability and the capacity to analyze other Air Force and DOD operations.**

GOER's architecture is structured for general DOD use. With some simple component modifications, each Service branch can easily adopt GOER. Services must tailor the Unit Type Codes/Equipment database and tailor the Mission Profile activity database. GOER will then generate command specific environmental summaries and review reports.

The system meets Air Force Geo-Spatial Data System requirements and is structured for upgrade version easy interfacing with Air Force planning software, such as Falcon-View, LOGMOD, EMIS HAZMAT Tracker, Geo-Reach, and BCAT. Engineered from commercially off-the-shelf (COTS) software, GOER has both web and stand-alone, compact disk capabilities. In the aggregate, potential DOD usage and benefits could be enormous.

GOER will save scarce environmental programming dollars too. AFSOC's costs to comply with environmental review requirements of Executive Order 12114 and DODD 6050.7 depend upon the number of missions and deployments under review. To determine the overall cost, AFSOC compared the GOER costs against the costs of an environmental professional staff to preparing environmental reviews of all missions or deployments. AFSOC anticipates pay back in less than five years. As other Air Force commands and military services use GOER, the pay back period could be substantially reduced. Developed jointly by AFSOC, Air Staff, Air Force Center for Environmental Excellence (AFCEE), Army Corps of Engineers (COE), CH2M Hill, Inc., Earth Tech, and Universe Technology, Inc. (UNITEC). The Air Staff provided project management support through AFCEE. AFSOC and AFCEE/UNITEC provided the system's project management, design, architecture, independent testing, and data. The COE, and CH2M Hill, with assistance from Earth Tech, constructed the system. Currently the system is under a pending patent, in which the government has unlimited, unencumbered use of GOER, including authority to change or modify.

#### **Public Demonstrations:**

The first operationally capable demonstration of the AFSOC Global Operational Environmental Review is scheduled for August

**20, 2001, at the 6<sup>th</sup> Annual Joint Service P2 and Hazardous Waste Management Conference and Exhibition, San Antonio, TX. The HQ AFSOC presentation is set for 2:00 pm. The system will be available for private viewing at the HQ AFSOC booth, number 638.**