EOL Field Duty Guidelines

Updated 27 February 2014

PART I - GENERAL RECOMMENDATIONS

The following field duty limits are recommended as EOL **guidelines** to be implemented across all EOL Facilities. These guidelines provide an acceptable level of physical and mental performance to carry out safe and efficient observing system operations. It should be noted that aircraft operations fall under the specific guidelines of the RAF Safety Management System, therefore RAF crew duty limits for flight personnel are **rules** and not guidelines, and must be strictly adhered to.

(1) Best efforts will be made to apply similar staff rotations to all EOL personnel associated with the same field campaign.

(2) A **maximum field duty day** should not exceed 14 hours in a 24-hour period. Maximum field duty time begins when EOL staff reports to a designated place to begin preparations for scheduled operations, and ends once operations on site are completed. Off-duty accommodation should be as close to the duty location as practical. If no suitable accommodations are close by, transit time may be counted towards the maximum field duty time. This will be considered on a case-to-case basis.

(3) EOL staff should not work more than **three consecutive days of maximum field duty days**.

(4) All EOL employees are permitted and encouraged to take one day off after six consecutive working days. No EOL employee should work for more than nine consecutive days without a mandatory day off. A day off will include two local nights, and cover at least 32 hours.

(5) Project-wide "Hard Down Days" are mandatory days off for all project participants including EOL staff. During Hard Down Days, no access will be granted to observing systems managed by EOL. To accommodate event driven weather conditions, Hard Down Days can be called at any time during a project. Additional accommodations/restrictions will apply depending on a specific observing system (see tables below).

(6) EOL staff must be given at least a **10-hour rest period** between the end of one and the start of the next working day. This ensures that staff has had sufficient time for uninterrupted rest plus time for meals, transportation and relaxation.

(7) Short meetings for mission planning and briefings may be scheduled on days off if they do not interfere with the 10-hour rest period and do not conflict with flight crew duty limitations.

(8) If appropriate, the Project Manager, Pilot in Command and/or Operations Director will have the option of calling for additional down time if fatigue is a factor.

(9) Scheduling for no more than 60 hours/week worked per staff must be done from the outset. Additional accommodations/restrictions will apply depending on a specific observing system (see tables below) to accommodate real time conditions. **Cumulative duty hours may not exceed 250 hours within a 30-day period**.

(10) EOL staff assigned to operations away from their home base shall not be scheduled for deployment periods **exceeding 31 consecutive days**. If desired, EOL staff may accept assignment for **up to 6 weeks (42 days)**. However, deployments beyond 31 consecutive days will have to be jointly evaluated by the employee, supervisor, and Facility Manager. Assignments over 42 days require explicit approval by the EOL Director.

(11) Following a field assignment, EOL staff will return to their home base for at least two weeks before returning to the field. Alternatively, EOL staff can take Personal Time Off (on site or off site) for two weeks.

(12) If significant time zone changes occur, additional rest periods will be implemented to prevent a decrease in performance due to the disruption of circadian rhythms.

(13) Best efforts will be made to work with the respective scientific teams early on to implement similar field duty limits for non-EOL participants, and to make sure that EOL field duty limits will have no negative impact on a project.

PART II - RECOMMENDATIONS BY SYSTEM

NSF/NCAR Aircraft (GV, C-130) & Airborne Instrumentation
Single EOL Crew

Maximum Flight Operations – Any 24-hour period	10 flight hours
Maximum Flight Operations – Any consecutive 7 days	40 flight hours; 60 duty hours
Maximum Flight Operations – Any 30-day period	120 flight hours
Maximum consecutive working days	6 days
Maximum crew duty day	14 consecutive hours
Minimum crew rest period	12 consecutive hours
Maximum consecutive days of maximum crew duty	2 days
Definition of Maximum Duty Day	More than 10 hours (no more than 14 hours allowed)
Definition of Night Duty	Show time earlier than 5 am LT Landing after midnight
Time required for switch from day to night time operations	36 hours

Aircraft crew duty limits will apply to all EOL staff flying or working on the aircraft and/or aircraft instrumentation. Projects requiring support above and beyond a single crew will be assessed on a case-by-case basis.

Mobile, Ground-Based Systems (MGAUS, MISS), including Support Vehicle

Maximum Operations – any 24-hour period	Up to 11 driving hours
Maximum Operations – any consecutive 7 days	60 duty hours
Maximum Operations – any 30 day period	250 duty hours
Maximum consecutive working days	No more than 9 days
Maximum field duty day	14 consecutive hours
Minimum rest period	10 consecutive hours
Maximum consecutive days of maximum field duty	3 days
Time required before restarting of clock*	34 off duty hours
Definition of Night Duty	Midnight to 6 am
Time required for switch from day to night time operations	36 hours

* Drivers can "restart" the 7-day consecutive working days period after a driver has 34 consecutive hours off duty.

For mobile operations, EOL will apply the Federal Motor Carrier Safety Administration (FMCSA)'s rules for the commercial trucking industry (http://www.fmcsa.dot.gov/rules-regulations/topics/hos/index.htm0. The main purpose of this is to prevent accidents caused by driver fatigue by requiring drivers to take a daily minimum period of rest and a longer "weekend" rest to combat cumulative effects accrued on a weekly basis. Since it has also been shown that driver alertness and performance are more consistently related to time-of-day than to time-on-task, and that drowsiness episodes are about eight times more likely to occur between midnight and 6 a.m. than during other times, EOL may apply additional limitations for night time operations.

Intensive Observation Periods (IOPs) must be communicated by the PIs to EOL staff at least 12 hours, and preferably 24 hours, in advance if anticipated operations are consistently in the same diurnal cycle, i.e., daytime or nighttime.

For maximum duration operations, each vehicle must have at least two drivers.

Fixed, Ground-Based Systems (SPOL, ISS, ISFS, GAUS) & Operations Center Support & Remote Operations Support

Maximum Operations – any consecutive 7 days	60 hours/week
Maximum Operations – any 30 day period	250 duty hours
Maximum consecutive working days	No more than 9 days
Maximum field duty day	14 consecutive hours
Minimum rest period	10 consecutive hours
Maximum consecutive days of maximum field duty	3 days
Definition of Night Duty	Midnight to 6 am
Time required for switch from day to night time operations	36 hours

While these observing systems are deployed, a **day off must be planned at no greater than nine-day intervals.** Scheduling may be flexible to accommodate real time observational needs conditions.
Intensive Observation Periods (IOPs) must be communicated by the PIs to EOL staff at least 12 hours, and preferably 24 hours, in advance if anticipated operations are consistently in the same diurnal cycle, i.e., daytime or nighttime.

Part III - IMPLEMENTATION, BEST PRACTICES AND RESPONSIBILITIES

Supervisors, Project Managers and Facility Managers associated with a specific system are jointly responsible for setting reasonable work schedules early on in the planning process. Feasibilities should be accompanied by staffing schedules and time lines that clearly identify responsibilities and personnel needed to meet operational requirements. If necessary, staffing shortages should be clearly marked and raised in the feasibility.

Facility Managers, working with supervisors and administrators, are responsible for planning far in advance the most effective way of covering work demands (including overtime) or a shortage of staff, in order to safely operate EOL observing systems and equipment during field campaigns. This process involves identifying qualified help either from within the Facility or from other groups within the Laboratory, and involvement of students, casuals or hired help.

All work schedules need to be planned and agreed upon in advance between the supervisor, the employee, the Facility Administrator and the Facility Manager. This requires a predetermined, established work schedule, approved by the Facility Manager before the start of the program. Work schedules should reflect the field duty guidelines described earlier in this document, unless an exception has been granted.

If it appears that weekly work hours need to exceed 60 hours and/or no down days may be implemented after six consecutive days in order to complete assignments, the employee is required to notify his/her supervisor at least two days and/or 20 hours before reaching the maximum within that payment period. The supervisor is required to communicate with the employee as well as other field staff (e.g., the project manager) to determine how circumstances have changed and whether there are serious safety concerns, and discuss the situation with the appropriate Facility Manager. If work conditions in the field cannot be addressed and remedied immediately, the EOL/Executive Management Council (EMC) jointly with the project-assigned Safety Officer will review the situation and take the appropriate steps to assure safe field operations.

EXCEPTIONS TO GUIDELINES

Under certain circumstances, EOL management may grant an exception in advance to the field duty limits described above. The request for exception must be submitted no later than three months before the start of operations to the EOL Director, and will be reviewed by the EOL/EMC.

To request an exception, the Facility Manager must justify, in writing, why an exception should be granted. The Facility Manager, with input and concurrence from the field support personnel, must provide a detailed operations and staffing schedule, identify staffing shortages, show that necessary steps were unsuccessful in filling gaps, and provide a risk assessment that addresses potential safety and health concerns.

During field projects, exceptions to flight procedures, including crew duty limits for flight personnel crew members, will follow the guidelines in the RAF Safety and Operations Manual, which requires explicit approval from the RAF Manager.

To maintain flexibility once staff is in the field, minor/short term adjustments to changing staffing requirements/needs should be addressed first by the Facility Manager. Major adjustments due to changes with respect to operational requirements must be discussed within the EOL/EMC. A comparison between planned and actual support including number of overtime hours worked will be reviewed as part of each project debrief.

ROLE OF THE PROJECT MANAGER

The Project Manager is responsible for: (1) formal communications between the PI, EOL, and other involved parties; (2) preparation of a project plan and compilation of an overall staffing schedule that is realistic, compliant with the above field duty guidelines, and acceptable to both the PIs and EOL; (3) preparation of regular updates to EOL management about the status of the project; and (4) communication with appropriate facility personnel to make sure that staff is familiar with their responsibilities.

For most projects is it desirable to have the assigned Project Manager in the field to carry out his/her responsibilities. If appropriate, responsibilities and authority can be delegated to technical and operational personnel in the field. While the Project Manager does not approve time cards, s/he has the right to ask for access to time cards as needed. Project Managers are expected to work with supervisors in assigning work duties during field projects, and to consult with supervisors on supervision of work and time charged to a project.

To prevent any conflicts of interest, the Project Manager cannot be a Lead PI or anyone who has a vested interest in the scientific data collected to further his/her scientific career goals.