

Balloon Program Office

Code 820

**EXCEPTION REQUEST OF NASA DUTY TIME
REQUIREMENTS**

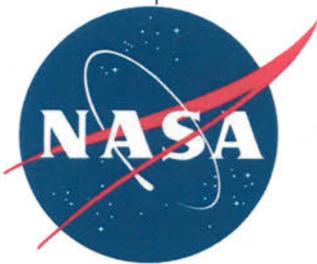
(As defined in NPR 1800.1D, Chapter 2)

FY19 Fort Sumner Campaign

Effective Date

July 2019

820/Balloon Program Office



**National Aeronautics and
Space Administration**

Goddard Space Flight Center

Wallops Flight Facility

Wallops Island, Virginia 23337

Request Date: July 16, 2019

Mission/Campaign: FY2019 Fort Sumner Campaign

Mission Site: Fort Sumner, NM

Requirement(s) Requested for Exception:

Critical Positions (2.14.3.3):

- a. 12 consecutive hours (16 consecutive hours in emergency situations with approval by a supervisor capable of evaluating the human factors risk level for the Critical role...);
- b. 60 hours during a 7 day work week;*
- c. 7 consecutive days without at least 1 full day off* (deviations may be pre-approved at a high level for up to 18 consecutive days with 2 full days off required after the extension period);
- d. 240 hours during a 4 week period.*

NOTE: The asterisks (*) denotes pre-approval is required for deviations by a designated supervisor after consideration of human factors safety issues for the Critical Position.

Proposed Alternative to Requirement(s):

Campaign, Launch, and Recovery Operations

With eight flights planned, not including a re-flight and four hand launches, for the Balloon Program Office FY19 Fort Sumner Campaign, exceptions to NPR 1800.1D duty time are required due to the nature of campaign support operations, launch, and post-launch mission support operations. There is the potential that critical personnel may work up to 72 hours during a 7 day work week, support the Balloon Program for thirteen (13) consecutive days without at least 1 full day off, and work up to 264 hours during a 4-week period. There is also the possibility that in the event of optimal weather conditions, two separate launch events may be attempted during the Fort Sumner Campaign operations in a single daylight period. This would require critical personnel to be present in exceedance of 16 hours in a single 24-hour period. This possibility will only be in effect during the launch count, which can include weekends. This is often the case with other similar campaigns like Palestine, TX. However, as is often the case, during days of bad or non-showable weather the crew is able to stand down to reset the clocks. It is probable that the majority of the crew can fulfill work duties without an exception.

Other Factors and Mitigations: Launch day activities are planned well in advance and there is a limited window in which to perform launch operations. Day of launch operations are tailored to front end operational readiness and account for potential weather holds and checkout procedures for Conventional / Zero Pressure Balloon (ZPB) launch operations. Mission durations in Fort Sumner range between several hours to over 24 hours aloft. Due to operational and weather constraints, the launch count will begin in the early morning hours and may extend into the early evening. However due to safety constraints, staff will be well

informed the day prior to launch and provided with an update on launch day stating whether launch attempt is a go. This requirement benefits work duty cycles and allows forward planning for personnel.

Launch, Mission Support and Recovery Operations

Importantly, in addition to the exceptions notated above, launch, mission operations, and recovery also require extended hours in the workday. There is high likelihood that critical personnel on the actual launch day will exceed the 12-hour maximum and will approach 16 consecutive hours during the operation per mission. This is applicable to all critical personnel due to the support constraints previously discussed. These extensions are not typical but since there is no limitation on the timeframe of the launch window and due to the limited opportunities and pace of operations, it is necessary to allow launch / recovery activities to exceed the duty time constraints.

Furthermore, for recovery operations following launch operations a limited subset of dedicated key personnel are necessary to be on hand and activated for up to 20 hours per mission to meet operational and safety oversight requirements. The maximum extension is valid solely for the Rigging Recovery Team, Campaign Manager, Campaign Manager In-Training, On Console Electronic Technicians, Meteorologist, Mission Manager, Mission Range Safety Officer, and Wallops Arc Second Pointer (WASP) Team. The maximum extension will be exercised with caution and only to allow completion of post launch flight operations and recovery operations for the mission.

Other Factors and Mitigations: The transition from launch operation to flight operations is seamless and utilizes the same personnel actively involved in the launch. However, crew transitions are planned and will be in place to provide relief for critical personnel during in-flight mission support. The crew has investigated and will make every effort to permit rest, limit or stagger duty times. This work duty cycle will permit some rest time and the potential for transition of critical staff. The Mission Manager and Range Safety Officer will be monitoring the mission and permission of the consecutive hour extension will be a joint decision.

Time Period for Exception Request:

Campaign Operations: August 7, 2019 – October 31, 2019

Launch Operations: August 12, 2019 – October 31, 2019

Affected Personnel & Critical/Non-Critical (C or N) Designation:

- NBOC Mission Team (C)
- BPO Mission Management Team (C)
- NASA Safety Team (C)
- WASP Integration Team (C)

Reason for Exception Request:

Deviations from NPR 1800.1D duty time are required for a subset of critical personnel due to the full breadth of balloon campaign operations including: campaign implementation, launch, mission support, and recovery operations. The Program expects the integration of these processes to be seamless. The support requirements necessary to conduct launch operations then transition to mission control through termination requires dedicated key personnel to be on hand and activated for up to 20 hours per mission to meet both scientific requirements, back-to-back launch opportunities, and remain within safety constraints for termination. The possibility is remote, but its consideration is necessary for these individuals, due to ongoing support operations at CSBF for on-going Antarctica Campaign preparations, which will be staffed by all available personnel.

A considerable portion of campaign preparations have been accomplished by the NBOC Mission Team. However, due to the limitations of dedicated staff for science support, support for the ongoing Fort Sumner campaign operations, and remaining Antarctica campaign preparation; a ramp up of duty time is expected for a subset of the mission team. The Program does not anticipate exceeding the requirements on a regular basis during the campaign. The proposed alternatives are expected to be of low frequency and limited to the aforementioned subset of Critical Personnel.

Background Information/Rationale for Request:

This Fort Sumner Campaign has eight flights and it will utilize the revised NASA safety and mission assurance processes implemented in previous campaigns including the Risk Grid Methodology or Active Risk Approach for conventional zero pressure balloon missions. Fort Sumner Campaign support requirements are well known and have been safely executed for numerous years. The Balloon Program employs extensive planning efforts prior to and during Fort Sumner campaign in an effort to mitigate contingencies. Slack is built into the workday and the launch countdown to accommodate for outdoor work and indoor rest, scheduled meal times, and coordination with support elements. However, the campaign requires all available personnel over several months to support in some capacity due to the support tempo and numbers of flights.

Without an exception, campaign and mission readiness can be negatively impacted resulting in missed launch opportunities and campaign extensions. In addition, launch operations may have to be prematurely scrubbed or post-launch mission control operations will have to be transitioned prematurely without the duty time exception.

The NASA mission and safety teams are actively engaged in campaign implementation and mission support. However, the extent to which the exceptions to duty hours are required is not fully known in advance and can be variable depending on launch and recovery conditions. The Balloon Program Office and WFF Safety Office will carefully monitor the status of both personnel and the mission throughout the campaign with the intent of re-evaluating the work hour and mission planning requirements in the future. The onsite Mission Manager and Range Safety Officer (or designee) are best able to determine the benefit of extra duty hours and fatigue concerns of the team. They will be actively engaged throughout the decision process.

With respect to remote field operations, the CSBF Recovery Lead is responsible for the safety of the recovery crew. These individuals will be actively engaged throughout the decision process.

Comments/Modifications to Request: (if any)