

## **Attachment 2**

### **Census Procedures**

In order to implement the statistical survey method, the following procedures are required (none of these are likely to interfere with collecting data comparable to the previous survey):

- All DOI-Aviation Management (AM) and BLM aviation policies and safety procedures will be followed when completing each census mission. These procedures must comply with, and do not supersede the Wyoming BLM State Aviation Plan, Zone Aviation Plan, or the current-year BLM Statewide Special Use Aviation Plan for Wild Horse Census and Gathering Operations. All flight managers on wild horse census missions should know and understand the aviation safety requirements, and must consult with the Zone Aviation Manager on any issues or policies that are not clearly understood.
- Strict adherence to safety and policy will be maintained in relation to personal protective equipment, seat belts, movement in the aircraft, communications during sterile cockpit flight phases, required aircraft weight and balance limits, and operational flight altitude limits (at least 500' AGL for fixed wing aircraft). The Aviation Life Support Equipment policy (351DM1) includes the following statement with regards to use of seatbelts. "Occupants shall wear lap belts and installed shoulder harnesses during all phases of flight unless there is a valid operational or safety requirement, which would cause the pilot in command to direct otherwise." (Examples of "operational requirements" that constitute exceptions include smokejumpers and helicopter rappel crews who need to remove seatbelts in order to perform specific aircraft exits during flight. There are no valid operational requirements during census missions.) Seatbelts should be cinched securely on each occupant so as to avoid head and neck injuries that may be incurred by contact with the ceiling of the cabin should turbulence be encountered in flight. If observations are required from both the left and right side windows of the aircraft, the observer in the right front seat will count horses on the right side, and the observer in the back seat will be secured to a seatbelt and remain seated on the left side of the cabin. As an alternative, and if aircraft performance allows, two observers in the rear seat (one on each side) may be needed and are encouraged in addition to a front-seat observer. At no time may observers remove seatbelts, nor should the pilot ever be asked to participate in counting animals since his/her primary focus must remain exclusively committed to the safe operation of the aircraft.
- Flights will follow a predetermined route as defined by GPS waypoints entered into the pilot's GPS unit. The flight course will generally follow an applicable pattern that will take advantage of light or topography with ¾ to 1 statute mile spacing. The BLM's primary observer will provide the pilot with the desired patterns and spacing to be flown based on his or her past experience in surveying the HMA. The intended flight route must be provided to Dispatch in the form of GPS waypoints or by sectional map depiction before the flight begins. Any deviations from the planned or intended flight route must be immediately and clearly articulated to Dispatch before deviations occur.
- A visual barrier, such as a curtain or piece of cardboard, should be placed between the front and rear seats so that observations by independent observer are not influenced in anyway by observations made by the primary observer, and vice versa. It is absolutely imperative for aviation safety that this barrier can be quickly removed and that a rear seat crewmember can

quickly get the attention of the pilot to alert him/her of a hazard that the pilot may not be aware of. The procedures for immediately halting a census count to deal with an in-flight hazard or emergency must be addressed and understood by all participants during the pre-flight briefing.

- Audio isolation should also be maintained in order to not influence the independence of the counts. The primary observer and the pilot need to communicate over the aircraft intercom, therefore, the independent observer will turn his or her headphones to the lowest volume setting to block sound. This will allow for the independence of observation but will enable the independent observer to turn up the headphone volume and quickly communicate with the pilot if necessary to alert him/her of an imminent hazard or threat to flight safety. The independent observer(s) in the back seat must keep the headphone microphone positioned near their lips at all times, and remain vigilant with periodic scanning of the flight area in search of other aircraft or other hazards that might not be immediately visible to the pilot. Again, the contingency for initiating immediate communication with the pilot must be addressed and discussed in the pre-flight briefing.
- Circling to count horses must be handled carefully in order to maintain independence between the observers. It is recommended that the pilot not be asked to deviate from the transect (unless a severe downdraft, other air traffic, or some other threat to flight safety is encountered) until after the plane has passed the group. At this time, everyone in the plane would be notified that one observer needs to circle back to count a group. The other observer should indicate on the data sheet whether or not he had already spotted that group before the notification.
- Once a deviation from the transect begins, all observers can contribute to the counting and reach consensus on the number of horses in the group. Observer independence is required in first sighting the groups, but not in counting them later.
- Following a circling/counting maneuver, the pilot should return to the point on the transect where the deviation began and resume tracking the transect.
- Crewmembers should avoid surveying during the time the pilot is returning to the line. This would be a good time to review their data sheets to make sure they have not missed recording any information.
- Although locations will be recorded essentially the same way as in the past, the location of the aircraft that should be recorded is the position when the horse group is perpendicular to (abeam) the aircraft. The goal is for the locations that the primary observer and independent observer record to be as close to each other as possible.
- Either the primary or independent observer will use a GPS unit to record the actual track flown and will download and save these tracks to a computer for later analysis.

### **Environmental Data Collection**

In addition to the procedures described above, the observers will need to collect some additional information about the conditions under which each horse group is seen. This additional information will help us to model differences in sightability between horse groups that are highly visible and those that are less visible and more likely to be missed. A data sheet will be developed to record this data without increasing the workload for observers too much. It is

critical to ensure that complete observations are made for every group of horses seen. The time each group was observed, animal count, GPS waypoint number as well as environmental conditions such as snow cover and topographic features must be recorded for every group seen. Failure to record every factor for even one group could compromise our ability to analyze the data properly. After each group has been spotted and recorded, a quick review of the data sheet will make sure that nothing was omitted.