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UPPER AIR OBSERVATIONS OPERATIONS

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1. **Purpose.** The purpose of this Supplement is to state Eastern Region procedures for operational aspects of the Upper Air Program.
2. **Training and Certification of Observers.** Each Weather Forecast Office (WFO) that administers an Upper Air Site will ensure that all launchers of weather balloons including contract observers are certified in accordance with national procedures stated in NWSI 10-1304.

In order to be certified to launch at a site, the observer must take the latest version of the Upper Air Exam for the type of radiosonde used at the launching site. If an observer comes from a site that used a different type of radiosonde, they must re-take the exam for the new type of radiosonde they will be using. Since this observer was previously certified, they can elect to take the exam open book. Exams are to be administered by the Meteorologist-In-Charge (MIC) of the WFO with the launch site or a designated proctor by the MIC who is on station and already a certified observer. The exams will be edited by the Regional Upper Air Program Manager

Training new staff members and updating current certified Upper Air Observers is the responsibility of the Upper Air Focal Point or designated Program Leader at the respective WFO by the MIC. Even if an observer arrives at an office that has been previously certified at another WFO with the same type of radiosonde, they must be provided training on local procedures for launching and should be given at least one test launch before they do a solo release.

Each WFO has the responsibility to develop a training plan and study guide. It is the responsibility of the WFO to establish a comprehensive training plan specific to their site. The training should include information on how to use the software and address the unique operating set-ups for use and local launching logistics (i.e. calling airport towers, obstructions around a launch site and other general safety issues).

WFOs should provide either at the launch site on posters or in reference guides in either hard or electronic copy in the operations area best practices for launching under difficult circumstances such as snow and ice, launching in conditions that could cause the balloon to hit an obstruction or launching in a wind regime that is unusual at a site. Such information should also be included as part of station drills or training at least once a year for certified observers.

3. **Grading of Upper Air Exams.** The Eastern Region Observation Program Leader is the official grader of **all** Upper Air certification examinations, even if the exam is a re-take. WFOs or contract sites should either e-mail or fax the exam's answer sheet to the Regional Observation Program Leader for scoring. The answer sheet needs to specify the exam's version and remark it was "Open Book" if that was an option. Otherwise, the exam will be scored as a closed book exam. The exam will be graded as soon as possible based on schedules and other duties at region. The Regional Observation Program Leader may appoint a designated back-up person to score the exams if needed. It is the responsibility of the Upper

Air office to schedule observer exams with ample lead time before a person needs to be placed into a rotation on a fixed schedule.

4. **Upper Air Proficiency Flights for Non-Regular Release Certificate Holders.** It is at the WFO's discretion to allow anyone who is not a full-time staff member at that WFO to perform an Upper Air release in order to maintain an active certificate. This should be made by the MIC or a member of management if the MIC is unavailable but may be designated to the Observing Program Leader (OPL) or Upper Air Focal Point at the WFO at the MIC's discretion. This is due to the staffing and workload issues at each WFO. The release should be at a routine time and scheduled in advance with the WFO. Specially scheduled releases to maintain a certificate are not permitted without prior approval from the Upper Air Program Manager at NWSHQ. If a student does not regularly work at your WFO but lives in the area and wishes to do a launch to maintain an active certificate at another office, any such launch must be approved by the MIC of the host WFO or a designated person. The host WFO may wish to drop the home WFO an e-mail stating the individual did a launch and give them the date.

Additionally, the user should do a launch at a WFO that uses the type of radiosonde and software they were last certified in. For example, a user certified on RRS should not do a launch at a TROS site and vice-versa. Doing a release as such does not render anyone fully proficient in doing an entire launch, which is the purpose of maintaining an Upper Air certification.

Contract sites should not be contacted to do a release in order for someone to maintain an Upper Air certification who is not a permanent NWS employee. If this option is executed, it should be agreed to between the parent WFO and the supervising contractor observer at the site.

If the user has not launched at a WFO before, be sure to ask their last WFO for their last release date so the user is known to have met the window for keeping their certificate active.

5. **Regionally Conducted Upper Air Station Inspections.** Eastern Region Headquarters will conduct an in-person station inspection at all sites that are either at a WFO or contracted as resources permit once every two to three years with the exception of Wallops Island, VA (WAL) which is handled by Sterling Field Support Center (SFSC). The inspection will be done during a routine launch and will proceed or followed by a review of the Upper Air Program as noted on WS Form B-48. Notification will be given to the WFO or contract site via e-mail from Eastern Region Headquarters at least a month in advance. Otherwise, annual inspections are to be conducted by WFOs in accordance with guidance specified in NWSM 10-1401.
6. **WFO Program Performance.** As part of annual performance reviews of WFOs, Eastern Region Headquarters will conduct a performance review of each WFO's Upper Air Program at Mid-Term and Annual Performance review periods as part of their score on their overall Observations Program. The primary method for scoring will be based on the specified fiscal

year Performance Scores computed monthly by NWSHQ and available online at: <https://sites.google.com/a/noaa.gov/nws-radiosonde-observations/performance-scores>

WFOs should review these scores monthly as well as the corresponding charts provided and work with their observers or contract sites to ensure observers are proficient in launches and that equipment is up kept and any outages are being addressed.

7. **Supply Shortages.** During periods of operations, there may be times when either lifting gas (Helium or Hydrogen) or supplies, including balloons, radiosondes, string, and/or parachutes are in short supply. If the situation is known by region to be a larger scale issue notification to the WFOs will come from Eastern Region Headquarters (ERH). If the supply situation is local and site-specific, the WFO is to notify the Eastern Region Observation Program Leader and the Eastern Region Regional Operations Center (ROC). The Regional Observation Program Leader will try to provide supplies as soon as possible in coordination with the ERH/Acquisition and Grants Office (AGO) team and National Logistics Support Center (NLSC).
8. **Supplemental and Non-Routine Releases.** Different levels of notification are required for additional releases (i.e. those not at routine synoptic times of 00Z and 12Z) such as supplemental soundings for significant weather and non-routine soundings for research, outreach, including open houses, and equipment testing. The purpose of the notification is to provide a robust supply chain for the program and up-to-date notification of widespread weather impacts.
 - a. **Supplemental soundings for significant weather operations.** If the request is from one office based on a local need notify via email the Eastern Region ROC at ERH.ROC@NOAA.GOV along with the Eastern Region Observation Program Leader as soon as possible. If multiple offices are requested to do supplemental releases such as to support a request from a national center for a larger scale event, approval is required from the ROC and coordinated with the Eastern Region Observation Program Leader. Coordination with Eastern Region System Operations Division (SOD) is required for any approval of supplemental soundings at contract Upper Air Sites (Chatham, MA (CHH) and Greensboro, NC (GSO)). Supplemental Releases at Wallops Island, VA (WAL) are to be handled by Sterling Field Support Center (SFSC).
 - b. **Non-Routine supplemental soundings for research and outreach, including open houses, and equipment testing.** Approval is required from the Eastern Region Observation Program Leader for any releases that fall into this category. Additional approval may also be required from National Weather Service Headquarters in certain cases.
 - c. **Additional release attempts necessary to make a scheduled (0Z or 12Z) or an approved supplemental flight do NOT require pre-approval.**

9. **Unscheduled Outage Notification.** Unscheduled Outage System (USOS) notification is required if two or more consecutive releases are missed. The notification should follow the normal USOS notification procedures with attention given to restoration time, actions and severe weather conditions.

10. **Radiosondes Stuck in Objects.** On occasion, radiosondes released may get stuck in a tall object such as a tree or on a tower or when they fall following the balloon bursting. They may drop on top of the roof of a home or into a tall object where the rope, parachute and rest of the flight train may get entangled on an object rendering it difficult to remove. Radiosondes that fall on private property in an accessible area are eligible to be removed providing there is proof that radiosonde belonged to the National Weather Service. Such proof should be based on the information filled out on the radiosonde as to the whereabouts of the release point.

If a WFO becomes notified of such a radiosonde, the WFO should request the individual provide specifics as to the location of the radiosonde along with proof that the radiosonde was launched by a site operated by the National Weather Service. If possible, ask the individual to provide a photograph of the radiosonde or flight train. A request should then be sent to the Systems Operations Division at Eastern Region Headquarters asking for permission to get funds approved to remove a stuck radiosonde and/or flight train. WFO personnel should not attempt to remove radiosondes and/or flight trains stuck in a tall object or on top of a roof or other structure on private property themselves due to safety reasons. In the event such a radiosonde and/or flight train generates media attention or other inquiries, refer any requests for interviews to National Weather Service Public Affairs.

11. **Disposal of Radiosondes.** Radiosondes may be found miles away from sites, some years later. If the type of radiosonde is no longer used by any launch site the National Weather Service operates, it may be disposed of. The following applies to current radiosonde types used by the National Weather Service including contract sites:
 - a. **Vaisala RS92.** All NWS sites using Vaisala RS92 radiosondes will not return rejected instruments to the National Reconditioning Center (NRC). The rejected radiosondes will be disposed of or recycled locally. Staff are to continue to log all required information on rejected RS92's in the H-6 Sonde Reject form prior to disposal.

 - b. **TROS.** The TROS LMS-6 403MHz radiosondes do not come with mailbags and do not have to be returned by the community. Users who find these radiosondes are free to keep them as a keepsake, talking point, or can throw them out. The batteries have already been fully utilized, so if the unit is going to be thrown out, the batteries should be recycled accordingly.

 - c. **LMG6 1680 mHz.** This comes with a mailbag and if found is hopefully returned utilizing the mailbag.

If the radiosonde found is returnable and does not have a mailbag included then a bag can be provided to the observer to mail the radiosonde back so it can be reconditioned.