

SOO TAP RECOMMENDATIONS FOR SOO JOB TRAINING

Final Revision - 20 July 2004

Introduction

The SOO Training Advisory Panel (TAP) was established to provide an effective process by which SOO job-related training needs can be identified, prioritized, and presented to the Field Requirements Group (FRG), Training Division, and COMET for implementation. The objectives in preparing this document were to assess the state of current job-specific and human factors training opportunities and materials for both newly commissioned and long-term SOOs, and to recommend improvements. The overarching goal of this effort is to improve the efficiency and effectiveness of the NWS SOO as a leader in the forecast office.

SOO TAP Assessment

In drafting these recommendations, the SOO TAP considered the following:

1. Previous COMAP Surveys
2. Existing regional SOO resources
3. Existing national SOO resources
4. SOO TAP Panel member suggestions
5. Suggestions and comments from the national SOO community (Appendix A)
6. The SOO Job Aid

During the process of determining training needs, the TAP identified a number of deficiencies in the job-related resources currently available to the SOOs. For example, it became apparent that there is a disparity among the regions in the amount and variety of local support available to SOOs. Some regions are relatively proactive in providing the desired training and assistance to new SOOs while others have a limited support system in place. Some information of interest to all SOOs is available only regionally or not at all. Access to information regarding local, regional, and nationally available training material is dispersed among numerous web sites. Some national support efforts dedicated to organizing and distributing training to the field have been hindered due to a reduction in support personnel.

The SOO TAP recognizes that the proposed recommendations cannot be implemented without financial resources; however, if the SOO is going to be viewed as a leader within the NWS and the meteorological community, it is imperative that these proposals be included within the framework of a professional development plan for the position. Providing funding for many of the identified training issues represents an investment in both the long-term viability of the SOO program and the National Weather Service.

I. Identified SOO Job-Related Training Needs

The TAP has identified specific job-related training and information needs that must be addressed for the SOO to continue as a well-prepared and effective leader in the NWS forecast office. Two areas of training are recognized as critical to the SOO program. First, a basal training offering is needed for all newly hired SOOs to become familiar with the demands and expectations of a challenging position. In addition, a continuing education program must be instituted so as the SOO matures in the position, he or she can remain viable as the science and training resource in the local office.

Below is an outline of the suggested training and professional development for both new and seasoned SOOs. These areas were identified after soliciting suggestions from the SOO community on what types of training they need to improve their job performance. These recommendations are not presented in order of priority nor do they encompass the entire range of possible topics. Additionally, the SOO TAP is not recommending that these training subjects be made mandatory, but rather, that such material be made available to those SOOs and SOO candidates who wish to acquire additional, or improve existing, job skills.

- a. *Developing and Administering an Effective Training Program*
 - Assessing staff training needs - *especially for newly hired employees*
 - Matching learning strategies with appropriate training techniques
 - Conducting various forms of training
 - Developing the inter-personal skills of a good trainer
 - Developing appropriate training materials to ensure Intern proficiency
 - Developing and executing quality training utilizing standardized NWS software systems such as WES

- b. *Operational Skills Training*
 - Using forecast shifts to develop and maintain forecast techniques and procedures
 - Leading scientific forecast performance assessments, including a solid understanding of statistical techniques which is essential for forecast and warning verification
 - Conducting damage surveys

- c. *Administrative Tasks Training*
 - Preparing biannual reports
 - Developing annual office training plans
 - Developing Individual Training Plans
 - Developing Individual Development Plans
 - Preparing staff training schedules
 - Maintaining Station Duty Manual Chapters

- d. *Management and Leadership Skills Training*
 - Dealing with difficult people
 - Communication/listening skills
 - Dealing with change
 - Management supervision skills
 - Labor and union issues
 - Dealing with management
 - EEO and Diversity
 - Team building
 - Coaching

- e. *SOO Personal Professional Development*
 - Time management
 - Acting as MIC
 - Media training
 - Networking skills

- f. *Scientific and Computer Skills Training*
 - Conducting on-station research
 - Computer programming training
 - Linux System administration training
 - How-to transfer new research and technology into operations
 - Submitting scientific proposals
 - Publishing in scientific journals
 - Effective Technical Writing
 - How to give an effective scientific presentation

- g. *Scientific Outreach Training*
 - Conducting collaborative research
 - Interactions with Academic Institutions within CWA
 - Interactions with Academic Institutions outside of CWA
 - COMET partnerships
 - Workshops/relations with military bases and FAA

II. Establish Regular National SOO Meetings

Feedback from SOOs indicates that the community desires additional opportunities to interact with fellows SOOs outside of their region. Unfortunately, inter-regional SOO gatherings are currently limited to residence courses where the subject matter is not necessarily directed towards SOO professional development. Additionally, a national SOO conference has not been held since 1995. Thus, the SOO TAP strongly recommends that a regular national SOO conference be scheduled every 2 to 3 years.

The SOO TAP is aware that national SOO meetings have recently been considered during the NSTEP process, only to be dismissed due to limited funding. The SOO TAP suggests that regional SOO meetings be forsaken during the fiscal year in which the national meeting is scheduled, and funding be reapportioned towards the national conference. Regionally relevant information may be presented during breakout sessions lasting 1/2 to 1 day during the national event.

III. Establish a National SOO Orientation Course

As stated in the COMAP recommendations, some of the topics suggested for inclusion in the updated COMAP may be better suited for a separate SOO development course; however, no such offering currently exists. Thus, the SOO TAP recommends that a national SOO orientation course be established to address those skills that are critical to the position but not purely science-based. The proposed course would target newly hired SOOs and provide an introduction to, and general expectations of, the position. The course should also include information on available national SOO resources, administrative duties, conducting on-station training, fostering collaborative relationships with the academic and private sectors, and other necessary job skills. The course length should be one week or less and held on an annual or as-needed basis. Seasoned SOOs should attend to provide “real-life” perspectives.

Similar regional orientation courses, which currently exist, can be used as model for the national offering. For example, Southern Region has a mandatory course dedicated to new SOOs held on a quasi-annual basis. The Southern Region agenda from 2004 is provided in Appendix B. Unfortunately, not all regions provide such support, making it necessary to offer this course on a national level in order to reduce the disparity in SOO job related training that currently exists.

IV. Establish a SOO-SOO Mentor Program

During the process of formulating the COMAP recommendations, the SOO TAP identified a strong desire for a formal SOO-SOO mentoring program. The proposed program would afford inexperienced SOOs the opportunity to work side by side with veteran SOOs over an extended period in order to facilitate his or her transition into the position. Since SOOs may be hired from outside the career forecaster ladder, mentors should be selected to address any deficiencies in the job skills that a newly hired SOO brings to the position. The introduction of a SOO Mentor Program will hopefully reduce anxiety-laden statements such as “I’ve just become a SOO, now what do I do?”

There may be multiple SOOs serving as mentors to each new SOO, but all mentors should have at least 3 years experience in the position. When possible, new SOOs should travel to the mentor’s office and work side by side to expedite the transfer of knowledge and operational experience. It is critical that the new SOO begin one-on-

one interactions with a designated mentor within the first six weeks of his or her assignment.

The SOO TAP recommends that while working with a mentor, a new SOO should gain insight in the following areas:

- How to balance the demands of local training, scientific studies, outside collaborations, personal development, operational shift work, and management responsibilities
- Establishing working relationships with your MIC, WCM, as well as Regional and National Headquarters
- Understanding local roles, if any, of the SOO in AWIPS, IFPS, WSR-88D, WWA, Warngen, etc. What are the roles of the ITO, ESA, and Focal Points in this regard?
- Planning, developing, initiating, and tracking on-station training
- How to lead and develop new interns and SCEPs
- Setting the example in your office for training and professional development
- Dealing with uncooperative employees
- Should the SOO be involved in personnel issues, if at all?
- Providing constructive verification to individuals and the whole office to enhance forecast operations
- Prioritizing training and keeping training workload manageable with the limitations of the staff's available time given shift work
- Best practices from the Mentor's forecast office, especially when dealing with the day-to-day life as well as some realistic expectations of being a SOO (i.e., you cannot do everything)

V. Create a SOO Resource Center Portal

The SOO TAP recommends that a web portal be created that serves as one-stop shopping for all SOO job-related resources. The proposed SOO Resource Center (SOO RC) will provide content directed at the entire SOO community and organized to allow users to locate the desired information easily. Existing SOO support sites such as the SOO Science and Training Resource Center (STRC) and Training Resource Center (TRC) will be integrated into the SOO RC. The SOO RC should be maintained by the NWS but developed and hosted with support from COMET.

The site will include information regarding all available training materials and resources. This recommendation includes the proposed training PDS, distance learning modules, how-tos, best practices, residence training, leadership programs, national SOO mailing lists, data information, contact information for national support personnel, and information regarding access to AMS journals. While actual content does not need to reside on the SOO RC, the information should be accessible from the site.

VI. Create a Training PDS Module for the SOOs

The SOO TAP recommends that a Professional Development Series (PDS) module be created that is directed at training within the NWS forecast office environment. SOOs identified as exceptional trainers or who have well-established training programs should serve as Subject Matter Experts (SMEs). The SMEs should work with COMET and possibly the NWS Training Center to develop the content what will be hosted on the SOO Resource Center site.

As an initial suggestion, the PDS could consist of three primary Professional Competency Units (PCUs):

PCU #1: Interpersonal and Management Skills

This unit would include topics such as how to work with WFO staff and the media, plus being the training manager. Additionally, this unit would outline essential skills needed for a SOO. This PCU may be connected to the Leadership Academy Courses (see Section VII below).

PCU #2: Training Skills

This unit details how to select, develop, present, and track training, including the needs of adult learners, differing modes of learning, and how to make effective presentations. COMET would be an excellent provider of training for this PCU, in addition to experts at the WDTB and NWSTC.

PCU #3: Science Skills

This unit would include topics such how to remain current in the science through professional development, conducting literature reviews and research, and writing papers and journal articles. In addition, it would provide information on developing collaborative relationships with other NOAA labs, Universities and the private sector partners and customers. COMET would also be an excellent provider of training for this PCU.

VII. Make Leadership Training a Requirement for Every SOO

Most SOOs are selected to the position based upon their potential to lead a science-based training program in the forecast office. Additionally, SOOs are expected to be leaders in the forecast office, and critical members of the management team. The SOO is likely to be the one individual who has a holistic understanding as to the impact of science and technology on forecast operations. It is this insight that assists the MIC in establishing a vision and direction for the office, maintaining morale, and ultimately accomplish the office mission. It is therefore essential that all SOOs have the necessary leadership skills to facilitate the advancement of forecast office objectives in meeting NWS goals.

However, depending upon their prior experience and training, a SOO may not have the skill set necessary to effectively assume the role of office manager and leader. Thus, the SOO TAP recommends that every SOO be required to participate in an established leadership program such as BLAST, LIFT, or NWS Leadership Academy courses. All SOOs should automatically qualify for leadership training by virtue of being selected to the position. If a region does not have a satisfactory program in place, then it should coordinate with another region to allow for participation by their SOOs.

VIII. Establish a SOO Continuing Education Academy

The SOO TAP recommends the establishment of a SOO Continuing Education Academy (CEA) within the framework of the proposed NWS University. Although the newly proposed COMAP and orientation courses will provide the necessary foundation for SOO efficacy, the establishment of a continuing education program would ensure that the SOO position continues to evolve concurrent with advances in science, technology, and management related issues.

The rationale for this recommendation is born from the requirements of the position, as defined by the SOO position description and Job Aid, and from the training needs identified by the TAP. The creation of a CEA would greatly benefit the SOO program by:

1. Adding structure and organization to SOO education and training, as well as strong linkages to the NWS mission and programmatic goals.
2. Providing additional insurance and risk reduction for agency wide initiatives through training (e.g., AWIPS=past, IFPS=present, Dual-Polarization Radar=future). If residence training for forecasters cannot be budgeted, then training for SOOs may greatly reduce the time and resources necessary to get new initiatives into operations.
3. Providing a conduit for partnerships between SOOs and research institutions (e.g. field projects, collaborative research), and consequently, a potential reduction in the time required for transfer of scientific and technology advances into operations.

The SOO TAP recommends that an accredited educational institution be selected to provide college credits for classes and courses completed by NWS SOOs. This proposal is similar to previously established programs at NWSTC, in addition to the 20-20 and crossover programs. Another alternative would be for the NWS to assign credit values to available training. Records of completed training should be officially tracked by the NWS Learning Management System (LMS).

A certificate program should be developed in collaboration with a University or within the NWS to recognize those SOOs who have achieved predefined milestones within the CEA. This recommendation would serve to encourage all SOOs to pursue additional training and education beyond that required of them upon being selected to the position. Monetary rewards would also greatly increase participation.

Appendix A – SOO Responses

The SOO TAP submitted the job training recommendations to the entire SOO community in June 2004. The following are the responses from the SOOs.

General Comments:

- When I was hired as a SOO, I had come up through the career ladder of the NWS, Intern, Journeyman, Lead, and SOO. As such, I brought many of the skills required to the job and, in fact, was hired because I had those skills. I realize this is not always the case. It might be useful to gather some data on how frequently SOO are hired through the career ladder. I say this because it occurs to me, and was my experience, that because of limited resource in the NWS WFO setting today, a new SOO has to hit the ground running. Many of these proposals would take the SOO out of an office. I would think this plan should not just be for SOO's but for prospective SOO, open to all MET's in the SOO career ladder.
- Overall - the recommendations do a good job in covering the needed proficiencies of the SOO. It would be worthwhile to take a second wag at tying all of these concepts(sections) into a more fully integrated end-to-end development plan for SOOs and perhaps include other NWS science oriented personnel like SSD units as well. Then an expanded document with more specifics will need to be developed.
- Does one need to be a SOO to start the development towards a SOO? Likewise, the progression from a SOO to a hire level of management might need to be addressed.
- Excellent set of recommendations -- thank you! I particular support the proposals for holding regular national SOO meetings, establishing a national SOO orientation course, and creating a training PDS module for the SOOs.
- It might be useful to solicit feedback to these draft recommendations from the MICs (or at least a subset of them). My impression is that there is a wide range of views within the MIC community as to how SOOs should be focusing their time and efforts.
- The reality side of me that says, "If all of the Administrative/Management/Leadership skills are addressed as recommended, the SOOs will have trouble maintaining their scientific and technical expertise, which is by far the highest expectation of others for the position."

SOO Job-related Training Recommendations

- I believe the training for both new and seasoned SOOs needs to include an extensive computer software and programming component -- especially given our migration to IFPS-based forecast operations. Might want to consider adding to Section VI (training PDS module) a PCU #4: Computer Skills.
- In part f of Section I (Scientific Skills Training), might want to include "developing collaborative research activities with a research institution or university."
- I would like to see a component to address training needs of SOOs for items of short-term demand. For example, of late, a short course on designing IFPS smart tools and smart initialization would have been very helpful for the SOOs. Another would be running and optimizing the workstation Eta at the local WFO. Stuff like that.

National SOO Meetings

- I agree - but also would like to have more access to other peer groups and raw research information as through AMS meetings!

SOO Mentor Program

- The plan does not have any time resource attached to it but it looks like a significant amount. I am wondering if that should be mentioned in the plan and alternatives given.
- Finally, the Mentoring program would be a good idea for SOO hired from outside the NWS but optional for others. Also, I have learned that successful mentor programs let the participants pick each other and are not assigned to each other. This should be an important part of the SOO mentor program.
- Philosophically, I agree - but not sure how applicable in practice. Not sure if I understand the glue/motivation that will make this concept work off paper. I definitely looked to several other SOOs as I went through the "what do I do now" phase, but most of the help from those more seasoned came from conversations over the dinner table at conferences or COMET symposia.

Training PDS Module

- A little hierarchy trouble in that this section sounds redundant principle to some of the others. Perhaps most of the other sections could exist as

subsections of this one and this section as the development part of a Science Training Academy within the proposed NWS University.

SOO Training Portal

- Create a SOO Resource Center Portal: Access to AMS journals is crucial and might be explicitly noted even though it rather specific.

Appendix B

NWS Southern Region
Operational Orientation for New Science and Operations Officers
Fort Worth, TX
January 27-29, 2004

AGENDA

Tuesday, January 27th

- 8:00 Welcome and Logistics
The SOO Notebook
Dan Smith, Chief, Scientific Services Division
- 8:30 Daily Weather Briefing
SRH Staff
- 8:45 History of the SOO Program
Dan Smith, Scientific Services Division
- 9:50 BREAK
- 10:00 Climate, Water and Weather Services Division
Steven Cooper, Jud Ladd, Ben Weiger, CWWD
- 11:00 Presentations by SOOs
Plans/Expectations for the Coming Year
Research and Training at Your Office
Kurt Vanspeybroeck, WFO Brownsville
- 11:30 Lunch
- 1:00 Leadership and BLAST
Victor Murphy, SRH Local BLAST Team Leader
- 1:30 The NSTEP Process
Dan Smith, Scientific Services Division

- 2:00 The Forecaster Development Program
Dan Smith, Scientific Services Division
- 2:30 Designing an Individual Development Plan
Assessing an Individual's Training Needs
Identifying Appropriate Resources
Residence Courses
Distance Learning Resources
MetEd, VISIT, WDTB, NWSTC
Dan Smith, Scientific Services Division
- 3:00 BREAK
- 3:15 The Weather Event Simulator: Some Sample Case Studies
- 5:00 Adjourn for the Day

Wednesday, January 28th

- 8:00 The SOO Job Aide
Dan Smith, Scientific Services Division
- 8:30 Daily Weather Briefing
SRH Staff
- 8:45 Strategic and Operations Plans
Dan Smith, Scientific Services Division
- 10:00 BREAK
- 10:15 Labor Management Relations and Staffing
Mac McLaughlin, Chief Program Officer
- 11:15 Administration Management Division
Camille Dyer, Administrative Management Division
- 11:30 Lunch
- 1:00 Presentations by SOOs
 Plans/Expectations for the Coming Year
 Research and Training at Your Office
Jeff Cupo, WFO Midland/Odessa
- 1:30 SSD Support for IFPS/GFE, the NDFD and IMS
Jack Settelmaier, Scientific Services Division

- 2:00 Presenting Research Results
Scientific Journals
Southern Topics
Tech Memos and Attachments
Attending Meetings and Conferences
Dan Smith, Scientific Services Division
- 2:45 BREAK
- 3:00 The Weather Event Simulator: Developing a Case Study
Bernard Meisner, Scientific Services Division
- 5:00 Adjourn
- 6:30 Informal Dinner

Thursday, January 28th

- 8:00 Training Policies and Procedures
Dan Smith, Scientific Services Division
- 8:30 Daily Weather Briefing
SRH Staff
- 8:45 Systems Operations Division
Tom Grayson, Mario Valverde, John Duxbury, Systems Operations Division
- 9:45 BREAK
- 10:00 Research and Professional Development
CSTAR and the COMET Program
On-line Journals
The NOAA Library
Data Archives
CD-ROMS, NCDC, COMET, FSL, SRH
Dan Smith and Bernard Meisner, Scientific Services Division
- 11:00 Presentations by SOOs
Plans/Expectations for the Coming Year
Research and Training at Your Office
Greg Patrick, WFO Fort Worth/Dallas
- 11:30 Lunch
- 1:00 The NWS Learning Management System
Bernard Meisner, Scientific Services Division
- 2:00 The Workstation Eta/Local Numerical Weather Prediction
Bernard Meisner, Scientific Services Division
- 2:45 BREAK

- 3:00 Research and Professional Development
 CSTAR and the COMET Program
 On-line Journals
 The NOAA Library
 Data Archives
 CD-ROMS, NCDC, COMET, FSL, SRH
 Dan Smith and Bernard Meisner, Scientific Services Division
- 4:00 Open Discussion
- 5:00 Adjourn