

YOPP-SH Meeting on Forecasting TOPs for East Antarctica and Ross Sea - Thursday 3 March 2200-2300 UTC.

Present: David Bromwich, Blake Murray, Jeff Wilson, Seong-Joong Kim, Arthur Cayette, Jonathan Wille, Matthew Lazzara, Michelle Hollister, Vito Vitale, Victoria Henrich, Simon Alexander, Raul Cordero, Adriana Gulisano, Greg Leonard (NZ for Inga Smith), Nina (NZ), Jordan Powers, Jorge Carrasco, Paola Alejandra Uribe Raibaudi

Apologies: Inga Smith, Daniela Liggett, Francois Massonnet

Main discussion points (**Primary conclusions**):

- Does it make sense to have a large area? **Yes.**
- How should the four TOPs be allocated? **2 East Antarctica. 2 Ross Sea.**
- How best to launch for a TOP? All at once, based on station operations? **All at once.**
- How to alert for a TOP? **Contact information needed for all radiosonde sites.**
- What events to target? **Major coastal cyclones and atmospheric rivers.**
- Forecast discussion methods, frequency of discussions? **Primarily via email twice a week.**
- How to initiate a TOP? **Consensus decision.**

Updates prior to discussion

Jeff's question to David: what would it take to make Davis a supersite? Just need to declare it so.

From Jordan: Vernadsky, the Ukrainian Antarctic station, is continuing operations as normal; Ukraine has also taken over the task of servicing the Polish Arctowski station from a Russian ship.

David advises the group about the presence of the South African *S.A. Agulhas 2* in the Marginal Ice Zone of the Weddell Sea in July-August. Unless the main period is benign, we will not extend the TOPs past the end of mid-July.

Does the large observation area make sense?

Ross Sea is a good candidate for cyclonic events and is more prediction oriented, however, would have an indirect hit from atmospheric rivers. The Peninsula and East Antarctica are prime spots for atmospheric rivers. Decision is to break Antarctica into two regions (East Antarctica-Ross Sea and Antarctic Peninsula) to perform the TOPs with 4 each per region. In East Antarctica-Ross Sea we will aim for 2 TOPs targeting East Antarctica and 2 TOPs focusing on the Ross Sea. SOP is from 15 April – 15 July with possibility to extend to 31 August. Some stations are able to provide more sondes than others so some stations may be able to cover an extra TOP.

How to run TOP?

Currently there is a Slack channel used to discuss forecasts. Issue is the accuracy of forecasts and models as 3 days is more accurate than 7 days, however 5 days out is good for seeing the tendency of systems. Art's team has a traffic light approach to go/no go TOP decisions and showed an example product chart for two locations and broadscale behavior of systems. Jonathan thinks this is a good general approach. The stations need some lead time to arrange rosters. We also need to minimize false alarms. Vito suggests we contact the stations to identify the minimum lead time each station requires and use this as a guide for selecting when we do go/ no go.

Jonathan is the point of contact (POC) for Dumont D'Urville and Kerguelen. **ACTION: Need to know the contacts for all radiosonde sites.**

Sydney is problematic for releasing additional radiosondes for the TOPs according to Vicki. Australia will provide more soundings from the mainland to supplement TOPs with up to four releases a day from Perth, Adelaide, Melbourne, and Hobart.

For practical reasons all sondes will be launched at the same time for the East Antarctica-Ross Sea TOPs. SIPN-South will be providing forecasts for sea-ice edge and concentrations for May, June and July with the potential to extend to the end of August to encompass the Agulhas campaign.

So, subject to modification, the approach will be: 5 days ahead an alert for a TOP is called, 3 days ahead a go/no go decision for the TOP, 1 day for the event duration at a specific location, 1 day afterward for a total TOP duration of 5 days.

What events should be targeted?

Australia will be launching extra soundings from their Antarctic stations, they do the 23z already, most also do a 12z and the additional radiosonde launches would be 06z while stations with more staff will also be able to do an 18Z. These are nominal times, and the release times may be up to an hour earlier than the nominal time.

Would like a major event impacting Davis and then Casey. The Australian forecasting team will have a master list for the Australian stations to advise them of release possibilities and go/no go; contact is Michelle Hollister/Scott Carpentier. Jonathan anticipates that the major events at Casey and Davis will also be atmospheric rivers. It was noted that McMurdo is not a good candidate for atmospheric rivers as it will encounter indirect hits as opposed to the systems that directly impact the Peninsula and Davis. McMurdo, however, is impacted by major cyclones.

Communication and decision-making?

Currently Slack channel for instant messaging (set up by Irian Gorodetskaya), faster than email with many features. There is a page for East Antarctica and a general YOPP-SH channel page. Issue with Slack is restrictions from military/institutions based on everyone's affiliation. Art plans to distribute forecast via email to certain people and further distribute from there. Will look into this further and determine best way to distribute information.

As far as deciding a TOP, general agreement is a consensus amongst teams.

Forecast Team Discussion

David would like to start prior to April 15 to get some practice in, tentative start date is Monday March 28. **Note: Friday April 15-Monday April 18 is Easter holidays in Australia at least.** Art will start March 28 and do two posts a week (post on Monday and Thursday each week). Art will provide the briefing to Matthew or can provide a group email out to all with the briefing (probably do both) and the briefings will be archived by Matthew. Suggestions for improvement are welcome. For the sondes to be collected by BAS, Steve needs to write to each station to get the full data. For the Summer SOP Jordan was able to use Steve's catalogue to then go back and select the YOPP soundings. It is possible to add YOPP Sounding in the plain language section of the TT code, but this is not foolproof.

At the end of each TOP do a quick "lessons learned". What stations did flights, etc. Matthew has access to the satellite data and will be putting 3 or 4 km mosaics together. Art may be able to capture some specific products from the new channels available at McMurdo. Vicki and Michelle have been looking at the receivers at Casey and Davis and wondering if the flights should be archived. Matthew suggesting that not too much needs to be archived locally as much is available from the NOAA and NASA. David suggested Vicki does archive locally just in case.

Jonathan would like to see a document laying out the procedures for calling a TOP. David planning to write a document with the procedures in the coming weeks.

Need to assemble contact information for all radiosonde sites.

French sites – Jonathan

Australian sites – Michelle / Scott Carpentier

Seong-Joong Kim – Korea

Others to advise David ASAP.