

Summary of Seminar on:

"Assessment of Satellite Uses"

Speakers:

James Gurka, NESS, Washington, D.C.

Frances Parmenter, NESS, Washington, D.C.

Moderator:

Budd Dorr, NWSFO, Boston, MA

Jim Gurka pointed out that satellite information is most useful when used together with all other data, especially radar and local observations from Service A. Satellite information is useful for the short range forecast and, especially, severe local storm forecasts of 4 to 5 hours. Beyond 6 hours satellite information should be used to evaluate guidance material from NMC.

Satellite information can be used to narrow down a large area of potential severe weather by identifying mesoscale features that encourage the development of severe weather. Features that identify differential heating boundaries are the sea breeze, river breeze, and early morning cloud cover boundaries. Severe weather should be suspected at the intersection of distinct convective lines such as gust fronts, organized convective lines merging with fronts or other lines.

An extensive presentation of slides and movie loops illustrated the various types of intersections between convective lines and gust fronts; dry lines and cyclonic wind shear, etc. An intriguing loop for May 6, 1975, showed how tornadoes followed the merger of a dry line and cyclonic wind shear line.

Frances Parmenter outlined the experimental "Nowcasting" program for Chesapeake Bay. Basically, it was a 3-year program in which a detailed description of the current weather was produced, followed by a short-period forecast that was disseminated hourly.

The principal ingredients of a Nowcast are a thorough understanding of the synoptic situation, and a knowledge of local problems. Nowcasting requires one person fulltime.

The high resolution satellite imagery contributes to the program in several ways. First, by providing a detailed description of the current cloud pattern over and/or approaching the area. Local studies based on satellite information will identify repeating local cloud patterns caused by

peninsulas, bodies of water, mountain ranges, etc. In addition, satellite data can be used in assessing errors in the NMC guidance progs.

Infra-red imagery is useful in identifying areas of development and dissipation necessary to forecasting changes.

Frances discussed a number of satellite pictures that have application to Nowcasting such as air pollution, fog formation and dissipation over land and ocean, winter problems such as snow plumes on the Great Lakes, and weak vorticity centers.

There is a tendency on the part of the forecaster to extrapolate conditions rather than forecast conditions in Nowcasting. This could lead to poor forecasts since small scale systems are affected by local effects that tend to intensify or dissipate systems.

Nowcasting is feasible but whether this much detail in the forecast is necessary for the average user is uncertain.

The principle means of communicating the Nowcast has been the NOAA VHF radio. However, there appears to be a great potential in the cable TV field.

The final lecture by Jim Gurka concerned winter storm situations. Most forecasters are concerned with where the precipitation is occurring in relationship to the satellite imagery.

Subtle changes in the texture of the cloud tops, as well as the brightness of the cloud, can give a clue to precipitation. Hourly observations on the satellite picture are very useful in identifying the particular cloud type associated with the precipitation.

The course notes of Roger Weldon were recommended to forecasters as authoritative information on cyclogenesis. Between computer runs the forecaster should identify or associate
Continued on pg 39

wire services and not the local loop. Vollkommer continued that these taxpayers are entitled to good warnings but the communications gap is destroying the good efforts and services of the NWS. MacDonald says that this is where the private meteorologist(s) can enter the picture and collect a good profit by banding together several small stations in remote, scarcely-populated regions. Copeland concurred and commented that many radio stations don't realize they can afford the services so it is up to the private sector to encourage this.

The next topic of discussion was the licensing of disseminators of weather information on radio and television. Copeland said the NWS has stringent agreements for weather circuits but Rigney claimed they are unenforceable.

The next exchange concerned the private sector paying a users tax. The government is collecting raw data and the computer is outputting guidance while the private meteorologists are merchandising the product. Sanders stated a tax was possible since the private guy is making a profit on this material. Wallace added that the tax is not realistic - the charge would put most privates out of business.

Educational material for the public was the subsequent topic of discussion. There is an interest in educational material - certainly not half-hour programs but short takes such as those developed at Penn State.

The subject of weather warnings incited much talk from the panelists and the audience. Wassall told the group that in Philadelphia there is a tendency for private meteorologists to issue warnings - hydrologic, marine, etc. MacDonald says the stations he serves read the warnings by the NWS and he comments on them one way or the other. He added we've got to watch out for the high school kids giving warnings -it's the job of the NWS only. Jack Rimkunas (NWS) and others said that it was the law of the land for the NWS to be solely responsible for weather warnings.

The large number of unemployed meteorologists was noted. Rigney complained there are approximately 1250 operational meteorologists in the NWS. He says from a public service standpoint, this is a small number to provide a good product and play the role in the communities we work in. It was agreed that we must find ways to absorb the young, budding meteorologists into the work force. One solution is to encourage hiring pros for TV and radio. In order for the meteorologist to be prepared for on-air work, MacDonald suggested that a course in broadcasting be given at all meteorology schools.

The closing remarks of the meeting dealt with the quality of weather broadcasts on TV/radio and

related obstacles. Jim Bigney (WLBZ-TV) spoke about the problems of telling stations what they can or cannot do - a question of freedom of access - the First Amendment. He suggested the NWA provide them with standards. We should think about the many more people giving out information that are not pros. Sanders called for regulation of the non-pros. Rimkunas replied that the TV weather show is 50-60% showmanship and the rest meteorology and added we should not restrict the on-air person to be a meteorologist because many fine presentations are broadcast by non-pros. Harvey Leonard (WNAC-TV) pointed out that one private service makes a profit by briefing the on-the-air, non-pro talent on some TV stations. Is this talent able to relay the information adequately? Wassall stated the quality of the weather shows in the Boston market is the finest he's ever witnessed yet other large markets present the weathermen as clowns. How should we overcome this? Parmenter proposed that the NWA develop a position paper - a policy to be presented to the Broadcasters Association. The policy would encourage employment of professionals, require airing updated forecasts, tone down sensationalism, etc. All concurred that this would be a good move.

Finally, referring to Bigney's comments, Art Ayers (NWS) noted that a managerial representative from the broadcast industry on the panel would have completed the cross section. Vollkommer added that a panel of users was needed.

End of meeting.

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Satellites from pg 42

features such as vorticity centers with the LFM progs to determine their validity.

On behalf of the membership of NWA, I want to thank Jim Gurka and Frances Parmenter for conducting this seminar on satellite application to forecasting.

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