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LITIGATION AND THE NATIONAL WEATHER SERVICE

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Abstract. This paper describes the impact of litigation on the National Weather Service. The involvement of agency personnel in litigation-related activities is detailed and selected lawsuits are reviewed. It is hypothesized that emerging new technologies such as Doppler weather radar and automated surface observing systems will create a greater presumption of negligence when weather-related accidents occur.

1. Introduction

While the number of lawsuits directed against the National Weather Service (NWS) has not mirrored the dramatic increase of litigation in the United States over the past decade, this societal trend has had a pronounced influence on the agency. This influence has been manifested in a myriad of ways. For example, past experience has taught the value of exercising extreme care in the preparation of NWS Operations Manuals and directives. A prime illustration of this new reality was the issuance in 1984 of the Weather Service Operations Manual Chapter D-21, entitled "Aviation Terminal Forecasts," where for the first time, the terms shall, should, may, and will, were precisely defined. Field office Station Duty Manuals correspondingly have been reviewed and rewritten as necessary to reflect the updated terminology and ensure that local policies and procedures are compatible with national and regional directives. Additionally, highly publicized lawsuits such as the Honour Brown and Delta Airlines cases have sensitized NWS personnel to the possibility that their actions could be minutely scrutinized in the event of some weather-related accident.

The NWS provides technical and documentation assistance to the Department of Justice (DOJ) in all weather-related claims against the Federal Government.

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The Aviation Safety and Evaluations Program (ASE) of the Aviation Services Branch, National Weather Service Headquarters, is the designated focal point for the provision of such assistance.

This paper portrays the involvement of the NWS in litigation during the 1980's. In the first section, an overview of the ASE's role in the litigation process is given. The second section describes the involvement of NWS personnel in the litigation arena based on an analysis of NWS depositions over the past seven years. The bases of claims against the NWS is then discussed along with a brief description of cases where the NWS has been found negligent. The final section gives a perspective of potential litigation issues to be faced by the modernized NWS of the future.

2. Role of the Aviation Safety and Evaluation Program

The Federal Tort Claims Act (FTCA) permits the United States to be held liable for damages under certain circumstances. Among its provisions is the requirement that a Notice of Claim for Damage, Injury, or Death be submitted to the appropriate Government agency within two years of the occurrence of the event or accident. Receipt of such a claim is usually the first indication that litigation against the NWS may be impending.

After notification of a weather-related claim, the ASE staff first determines if a weather documentation file had previously been established for the event or accident in question. In most cases, the National Transportation Safety Board, consulting meteorologists, or private attorneys will have made one or more requests for data relating to the subject event or accident.

The General Litigation Division (GLD) of the Department of Commerce (DOC) has the responsibility in determining the merits of the claim and responding within six months of the claim's receipt. The GLD relies on the ASE staff to provide technical assistance in analyzing weather factors and interpreting agency guidelines pertinent to the claim.

After a lawsuit has been filed, attorneys use three avenues to prepare their cases for trial. These include the Interrogatory, Requests for Production of Documents, and taking of depositions.

An Interrogatory is a request for written information. The ASE staff assists the DOJ attorney in responding to questions that address the NWS. Typical queries concern operational and dissemination procedures, staffing policies, equipment lists, or identification of NWS personnel.

The Request for Production of Documents is the primary means for plaintiff's attorneys to obtain tangible weather records. Normally, the ASE staff interprets pertinent portions of the Request and provides the appropriate documents to the DOJ attorney. Commonly requested documents include weather observation forms, forecasts and warnings, operations directives, and technical or reference materials. During the Delta 191 litigation, the ASE staff responded to more than 400 requests from Delta Airlines attorneys.

The final and most time-consuming means of discovery is the deposition where NWS and other Government employees are required to respond to questions from plaintiff's attorney(s) under oath. The DOJ attorney provides a list of NWS personnel to be deposed to the ASE representative for coordination with regional and local offices. The ASE representative, who is experienced with the requirements and procedures of the deposition process, attends the counseling session prior to the deposition to assist the DOJ and DOC attorneys in preparing the witness to testify. In addition, the value of moral support provided by an experienced NWS colleague is not to be underrated. Usually, the ASE representative also attends the actual deposition to provide technical assistance to the DOJ attorney as required.

The ASE staff continues to provide any requested assistance to the DOJ attorney up to and through trial. Examples of these activities would include working closely with the Government weather expert, reviewing and commenting on deposition testimony, and on rare occasions, serving as an expert on NWS policy and procedures.

3. NWS Personnel Involvement in Depositions

During the period 1983-1989, NWS personnel were involved in 59 depositions arising out of litigation directed against the Government. This total does not reflect testimony before the National Transportation Safety Board. Of the above number, 54 depositions were related to aviation accidents. The remaining five were associated with marine or hydrology cases.

A weather-related accident, particularly one involving a commercial air carrier, can generate litigation against the Government. These cases normally involve the depositions of numerous NWS personnel. In fact, as a result of the Delta Airlines Flight 191 accident at the Dallas-Fort Worth Regional Airport (DFW) on August 2, 1985, the NWS was required to produce 24 employees for deposition testimony. Among personnel deposed in this case were individuals from NWS Headquarters, Southern and Western Region Headquarters, the Fort Worth Weather Service Forecast Office (WSFO), the Fort Worth Center Weather Service Unit (CWSU), and the Stephenville, Texas Weather Service Meteorological Observatory (WSMO). The accident involving Air Wisconsin Flight 695, near Valley, Nebraska on June 12, 1980, required depositions of eight NWS employees from the Omaha WSFO, the Minneapolis, Minnesota CWSU, and the North Platte, Nebraska Weather Service Office.

It is illuminating to list the job classifications of employees who were required to give deposition testimony. Table 1 shows this breakdown for the 1983-1989 period with and without the influence of the Delta 191 litigation. The somewhat equal distribution of depositions is rather surprising since the prevailing wisdom has been that the CWSU's, which are collocated with Air Route Traffic Control Centers, are particularly exposed to the threat of involvement in legal proceedings.

Table 1. NWS depositions specified by job classification with and without the influence of Delta 191.

NWS Depositions 1983-1989

	With Delta	Without Delta
NWS Managers	19	6
WSFO Meteorologists	12	10
NWS Specialists	12	10
CWSU Meteorologists	13	7
Hydrologists	2	2
NSSFC Meteorologists	1	0
Total	59	35

The most obvious statistics is that only one meteorologist from the National Severe Storms Forecast Center (NSSFC) has been required to give a deposition during the past seven years. This was an unexpected finding since the NSSFC has the responsibility for the issuance of In-Flight Advisories (AIRMET's, SIGMET's, and Convective SIGMET's) and Aviation Area Forecasts which are products designed specifically for the aviation community. One possible reason for this low involvement of NSSFC personnel in litigation-related activities has been the lack of litigation spawned by aircraft accidents occurring during the enroute phase of flight. Additionally, the mission of the CWSU's is primarily for this same phase of flight.

Since the Delta litigation accounted for approximately 41 percent of NWS depositions over the 1983-1989 period, it would be instructive to remove that influence and look again at the groups of NWS employees at high risk of being involved in the legal arena. As Table 1 indicates, duty personnel at our local field offices have had the greatest involvement in litigation-related activities.

What types of accidents generate claims of negligence against the NWS? Thunderstorm-related accidents led the way with 45 depositions during the seven year period. Icing and/or turbulence claims accounted for five depositions, and nonconvective wind shear and instrument meteorological conditions claims accounted for two each.

Finally, major airline accidents accounted for 28 depositions, commuter accidents for ten and general aviation accidents for 16. If the numerous depositions arising from the Delta and Air Wisconsin lawsuits are discounted, it is apparent that most lawsuits directed against the NWS arise out of general aviation accidents. Marine, public, and hydrology cases are relatively rare.

4. Legal Claims Against the Government

One reason that there has not been more claims against the NWS is the relatively narrow provisions under the FTCA which allow complainants to seek redress from the Government. The FTCA essentially waves sovereign immunity for the Government with certain exclusions, the most important being the discretionary function exception. This exception has been defined to include activities which involve policy and judgement. As a result, court decisions over the years have firmly established that the Government cannot be held liable for damages arising from its policies or from forecasts issued in accordance with existing directives. In order to successfully sue the Government (including the NWS), the plaintiffs must discover areas where policy and/or judgement are not the issues.

Two areas which have been investigated during the past several years are equipment maintenance and non-discretionary language in operations manuals. The famous case of *Honour Brown v. United States* is a prime example of the former situation. In that litigation it was claimed that inoperative wind sensors on a weather buoy contributed to an inaccurate marine forecast. The forecast allegedly contributed to a fishing boat accident where three people perished. In his decision, the presiding judge opined that the Government was negligent since it had allowed 2 1/2 months to elapse before repairing the buoy. This adverse decision was reversed on appeal based on the discretionary function exception, that, the Government's right to decide whether and when to fix part of a weather observing system.

Non-discretionary language in operational directives accounted for the two instances where the NWS has been found negligent. In the 1982 decision of *Delroy v. United States*, the court ruled that the NWS was negligent for failing to issue a SIGMET for thunderstorm conditions specified in the NWS Operations Manual. The other decision where the NWS was held liable was *Springer v. United States* in 1986. This accident was determined to have been caused by nonconvective low-level wind shear. The NWS was ruled negligent in that it did not amend the applicable Aviation Area Forecast for the location of a warm front and the presence of associated wind shear. The Springer decision was reached without any allegations of negligence against the NWS during discovery or at the trial. This case is a prime example of the extreme care the NWS must give to all lawsuits where weather may be considered a factor in the cause of an accident.

On September 1, 1989, the U.S. District Court at Fort Worth, Texas ruled that Delta Airlines failed to prove that the Government was guilty of any negligence which proximately caused the accident of Delta Flight 191. The decision was reached after a trial lasting 14 months. In those proceedings, Delta claimed that the NWS forecaster at the Fort Worth Forecast Office should have called the DFW tower and issued a weather warning for the thunderstorm affecting the airport. The airline also alleged that the CWSU meteorologist at the Fort Worth Air Route Traffic Control Center had been negligent in taking a lengthy lunch break around the time of the accident. Delta is appealing the decision.

5. Future Challenges for the NWS

What does the future hold for litigation against the NWS? As indicated in the sections above, there's been no discernable trend that the NWS is increasingly a target for litigation. Currently, the NWS has received claims or is in active litigation for 17 weather-related aircraft accidents where NWS procedures, services and/or products are at issue. Administrative claims addressed to the agency for these cases total slightly more than \$808 million. Claims for the Delta 191 litigation alone amount to nearly \$436 million.

Areas that merit special attention in the coming years are the emerging new technologies which are in their initial stages of implementation. The Next Generation Doppler weather radar (NEXRAD) and Automated Surface Observations Systems (ASOS) are two such technologies. They will offer high quality, high density data that promise to substantially improve warning and forecasting services to the nation.

NEXRAD will pose several unique problems in litigation-related activities. First, the interpretation of the NEXRAD reflectivity and velocity products will require highly trained radar meteorologists. Gone will be the days where an attorney could look at a radar overlay or radar photograph of a plan position indicator scope and be able to make a reasonable estimate of what it shows. Private-sector consulting meteorologists will need to be trained in the interpretation of NEXRAD products. Second, the volume of NEXRAD data will greatly exceed that of conventional weather radar. Finally, the subset of NEXRAD products archived at the National Climate Data Center will not necessarily mirror those received at an individual principal user processor. Retrieving radar products from the local processor in response to litigation-connected requests may prove to be cumbersome.

While ASOS and the Federal Aviation Administration's sponsored Automated Weather Observing System (AWOS) will offer expanded areal coverage, nearly minute by minute observations, and computer generated voice transmission of the observations directly to the pilot, there will be significant differences in the content of these automated observations from those prepared by human observers today. Examples of some of the limitations of ASOS and AWOS include the sensors' current inability to distinguish cloud type or detect the presence of thunderstorms and hail. Remarks amplifying the ASOS and AWOS observations will, for the most part, also be missing.

Limited human augmentation of ASOS and AWOS observations will be performed at a yet to be determined number of airports. Certainly, the choice and location of these augmented sites and the extent of augmentation are covered under the discretionary function exclusion of the FTCA. It will be interesting to see what effect, if any, the advent of ASOS and AWOS will have on aviation litigation in the future.

One positive aspect of these new surface observing technologies related to litigation is that NWS exposure to allegations of negligence concerning the

taking of weather observations will be dramatically lessened. Currently, there are two ongoing litigations where it is alleged that NWS weather observers were negligent in the performance of their duties.

Finally, this increased quantity and quality of radar and surface weather observations, as well as other data sources such as wind profiler information, automatic aircraft reports and satellite data, may lead both to a greater reliance on NWS warnings and forecasts and the perception that such reliance is reasonable. Thus, there will possibly be a more likely presumption of NWS negligence in the pilot and legal communities when weather-related accidents inevitably occur. In addition, since these technologies are so radically new, the DOJ may need to rely to a greater extent than today on in-house NWS weather experts in defending the Government.

6. Conclusion

In spite of technological advances such as NEXRAD and ASOS, aircraft will continue to occasionally crash in adverse weather conditions in the future. Correspondingly, there will likely be instances where allegations of negligence will be directed against the NWS.

The goal of the aviation weather program of the NWS is to provide the best possible weather information to pilots and the national airspace system which serve them. The threat of litigation, while burdensome, will not detract the NWS from this effort.