

BLACK CLOUDS AND SILVER IODIDE:
PUBLIC SAFETY AND WEATHER MODIFICATION LAW

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Abstract. Public safety concerns underlie weather modification law. There are express references in statutes, administrative rules and judicial opinions to seeding-related drought, downpours, disaster and damages, to toxic seeding agents and to liability insurance requirements. Laws also regulate atmospheric weather resources development activities by requiring modifier licenses, operational permits, seeding suspension criteria and public notice of proposed projects. These provisions imply that public safety could be harmed unless cloud seeding is regulated. This legal perception calls for caution in operating projects not only so they avoid harm, but also so they cannot reasonably be seen as causing damages.

Introduction

The police power is the authority of the state to make and enforce laws concerning the public health, safety and welfare. It is the jurisdictional basis for governmental regulation of weather resources management (Wright & Wright, 1985). During preparation of the lists of American and Canadian regulatory provisions dealing with cloud seeding which appear in each issue of this publication (WMA, 1990a), it has become obvious to the author that police power considerations--particularly those about public safety--lie at the core of weather modification law. These laws and regulations often speak with the rhetoric of public security and safety. Their language expresses the notion that the goal of cloud seeding statutes and rules is protection of the public from disaster. Moreover, language in judicial opinions dealing with atmospheric resources has delivered the same message. In addition to these instances of express language telling of possible destruction and harm, there are other legal provisions also seeking to protect health, safety and welfare. Although they do not speak of gloom and doom, the aim of their substantive provisions is to minimize public risk that could be caused by unregulated cloud seeding activities. Police power considerations, both express and implied, thus permeate weather modification law.

Rhetoric

The most striking rhetoric in weather control legislation about safety is found in the statutes of Rhode Island, Louisiana and Texas. In Rhode Island, the governor may authorize state agencies, "including... those with responsibilities in connection with... weather modification" to "make studies of disaster-related matters." (R.I. Stat. § 30-15-7(3)). This is the only cloud seeding provision in Rhode Island. A Louisiana and Texas have complete regulatory laws, but they also speak of "disaster" and weather modification. If the civil defense agency in each of those jurisdictions determines that precipitation from weather modification

will "create or contribute to the severity of a disaster," it can set in motion a procedure for suspension of seeding permits until "the danger has passed." (La. Stat. § 29:714; Tex. Gov't Code § 418.048). Of course there have been no weather modification-related disasters of the sort feared in Rhode Island, Louisiana and Texas, although litigants unsuccessfully have asserted claims of them such as in the Yuba City (Mann, 1968) and Rapid City flood cases (St.-Amand, Davis & Elliott, 1973).

Silver iodide is toxic and can produce harm when used in sufficient quantities and concentrations (Klein, 1978). The fact of toxicity has not escaped judicial attention, the notion of concentration as a condition precedent to any harm to the environment or to persons has not been similarly elaborated by judges. A Pennsylvania trial court judge, in Pennsylvania Natural Weather Ass'n v. Blue Ridge Weather Modification Ass'n (44 Pa. Dist. & County Reports 749, 761), noted that various seeding agents "are poisonous" and concluded that "possible harm can result from uncontrolled and unregulated weather modification activities." If a plaintiff proved that harm resulted or would follow from seeding, an injunction banning it would be issued. There was in this case no such order because the complainant did not show damage. The court noted that dilution of the nucleant could be a safety factor, but went no further to discuss the quantity or concentration of silver iodide necessary to cause harm.

The statutes of Pennsylvania (Pa. Stat. tit. 3, § 1114) and West Virginia (W.V. Code § 29-2B-13) call for liability of weather modifiers who cause a "drought" or "heavy downpours or storms which cause damage to lands" and require them to compensate farmers and other property owners for such damages. This is done without regard to whether the defendants were negligent or in any other way at fault. Some other jurisdictions state specifically that cloud seeding is not the sort of "ultrahazardous" or "abnormally dangerous" activity which would give rise

to liability without fault (Ill. Stat. ch. 111, § 7339(a); N.D. Code § 61-04.1-37(1)). And there are laws that assert that the mere act of inserting seeding materials into the atmosphere does not constitute either a trespass or a nuisance (See, e.g., N.D. Code § 61-04.137(2); Utah Code § 73-15-7). All of these laws, both those requiring fault and those that do not, require litigants to prove a causal linkage between the seeding and the flood or drought disaster in order to obtain relief for their losses. It is upon this proof of causation issue that plaintiffs have failed, rather than because of legislative views of whether liability can be based on some no-fault theory such as ultrahazardous activity or abnormally dangerous activity (Reinbold v. Sumner Farmers, Inc., & Irving P. Krick, Inc., No. 2734-C, Cir. Ct., Tuscola Co., MI, 1974; Slutsky v. City of New York, 97 N.Y.S. 238; Davis & St.-Amand, 1975). Nevertheless, the laws discussed here do use public safety language in the context of weather alteration.

Substantial risk to or adverse effects upon "land, people, health, safety, property, or the environment" is of sufficient concern to lawmakers for them to call for administrative findings upon such dangers as part of the permit granting process (See, e.g., Colo. Stat. § 36-20-112(3)(e); Ind Code § 13-1-1.5-6(3)). Suspension and modification of permits by regulators also may follow an administrative finding that the seeding causes an "emergency which could endanger the public safety, health or welfare, or the environment." (See, e.g., Minn. Stat. § 42.11(b); Okla. Admin. Reg. § 5-510.7). Rule making by state agencies dealing with weather resources management is authorized on grounds that it would "minimize possible adverse effects to the public health, safety and welfare and the environment." (See, e.g., Ill. Stat. ch. 111, § 7317; Mich. Laws § 295.104(3); Wash. Code § 43.37.030).

It is quite common for federal environmental laws to impose financial responsibility requirements upon firms whose activities involve risks of damages exceeding their net worth (Kehne, 1986). Similarly state weather modification laws and rules require applicants for permits to conduct weather resources management projects to demonstrate their ability to pay for tort damages that may be assessed against them due to project activities. Sponsors can post a bond or show proof of liability insurance (See, e.g., Fla. Stat. § 4-3.321; Ore. Stat. § 558.050; Colo. Regs. § 401.1(C)(1)(k); Okla. Regs. § 5-510.3). Insurance premium costs must be built into the price charged sponsors for running a project. And, in the event of unavailability of adequate liability insurance at a reasonable price, this concern over public safety will act as a bar to weather modification operations. Safety rhetoric and insurer timidity could

prevent beneficial atmospheric water resources development.

Substance

Government regulation of business is intended to protect public welfare as well as support regulated entities and achieve various other societal goals (Davis, 1991; Gellhorn, 1968). Even if they did not use the language of disaster, it is clear from laws establishing administrative control over weather alteration that public safety is an end to which government intervention is the means. The notion that operator incompetence may breed disaster drives the requirement for professional licensing of cloud seeders. Proof of education and/or experience is required (See, e.g., Ind. Code § 13-1-1.5-3(a)(2); Mont. Code § 85-3-203; Colo. Code Regs. § 401.1(B)(2); Okla. Reg. § 5-505.2(C)). Such requirements, for the most part, seem to be less specific than those stipulated by the Weather Modification Association for operator certification (WMA, 1990b).

Permits to operate projects are currently required in twenty-four states (Davis, 1990). Applicants for permits must provide project plans which state officials will examine to determine if the proposed projects are safe (See, e.g., Nev. Stat. §§ 544.080(2), .120, .150; Wis. Stat. § 93.35(6)(d)(4)). In the event of objection by any party aggrieved to the administrative decision concerning the permit application, judicial review is provided for in weather control laws (See, e.g., Ill. Stat. ch. 111 § 7336; Kan. Stat. § 82a-1410). Not only have persons opposed to cloud seeding projects vigorously complained at the administrative level (Kirby, 1978), but also there has been at least one appeal to the courts of a decision from an administrative hearing examiner relying on a public vote against weather modification in denying a hail suppression permit (Atmospherics, Inc. v. Ten Eyck, Civil A, Alamosa Co. Colo. Dist. Ct., 1973).

California (Cal. Water Code §§ 410, 411) and Idaho (Ida. Code § 22-3201) do not have full regulatory laws, but do require public notice as a condition precedent to launching a weather modification operation. Most states that do fully regulate weather modification activities also have public notice provisions--usually through publication in newspapers within the target area of notice of intent to seed (See, e.g., Fla. Stat. § 403.361; Mich. Laws § 295.112). In theory such notice would allow someone concerned over the safety of a seeding project to raise questions at the administrative level. Notice by publication provisions have not caused many people to attend weather modification permit issuance or modification hearings. Persons who complain about what they claim are disbenefits from cloud seeding operations usually do so after uncontested permit issuance and actual seeding either

is under way or has been completed for the season. A cardinal axiom of administrative law is that persons seeking judicial review of actions of an administrative agency must first exhaust their administrative remedies (Gellhorn & Levin, 1990). Notice to the public of hearings, followed by issuance of permits, in turn followed by seeding which is allegedly damaging, sets the ground work for imposition of the rule of exhaustion. Persons aggrieved should contest cases at the administrative level.

Weather modifiers need to avoid the very appearance of causing harm as well as avoiding harm itself. Suspension criteria in operational plans help them accomplish this (Bluestein et al, 1986). Under a carefully prepared suspension plan, criteria provide for stopping seeding activities not only when weather conditions are such that continuation would contribute to unruly weather, but also when it appears that it might do so. The laws of Illinois (Ill. Stat. ch. 111 § 7328(b)(4)), Kansas (Kan. Stat. § 82a-1411(7)(3)(c)), and North Dakota (N.D. § 61-04.1-16(2)(d)(2)) mandate inclusion of such automatic shutdown procedure in applications for operational permits.

Observations and Conclusions

The legal mechanisms designed to avoid disaster stemming from artificial nucleation function as they were intended to. There have been no legal cases in which judges have imposed liability for harm (Davis, 1987). Of course regulation that is too tight, such as seeding suspension criteria that prevent using most meaningful seeding opportunities, also prevents accomplishing management of atmospheric water resources to benefit of the public. Concern for and rhetoric about disaster and cloud seeding are overblown in view of the record. The worst fears of lawmakers need not be expressed so vividly. That too can be counterproductive.

In view of the widespread view that weather modification is dangerous tampering with Mother Nature (Farhar, 1976) and its reflection in law, there clearly is merit in the notion of using an excess of caution approach to cloud seeding. No one seeds clouds just to do it merely because they can do so. Weather modifiers are professionals, not sorcerer's apprentices. Everyone in the business of weather resources management should seed as though the public is watching their every move and waiting to pounce at the slightest excuse. It is. The public sees no "silver lining through the dark cloud shining."

This may be a little disheartening to dedicated professionals who do not dream of causing anyone any loss. But they are not alone. Other professionals, such as accountants, doctors, lawyers and dentists also are regulated by laws that expressly

speak of malpractice and impliedly take the position that, without governmental controls, the public health, safety and welfare will suffer (Young, 1987). It is the American way of exercising the police power of the state. The lawmaking process in a democracy is not smooth nor is it easy. Legislative committees must agree on statutory language with each other, houses of state legislatures must also come to exact agreement on wording for bills to become laws, and governors must either be persuaded to sign bills or be overridden with super majorities of legislators of both houses of state legislatures. Any legal norm must emerge down a Byzantine labyrinth of procedures in order to become the law of the land (Davies, 1986). When legislators are persuaded that disaster may befall their constituents, they are moved to act. Otherwise laws are much less likely to get passed by legislatures, signed by executives and interpreted by judges. Hence the public safety language and concern of regulatory law--including weather modification law.

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