

# APPENDIX D—PRODUCTS LIABILITY IMPLICATIONS OF LEGALLY REQUIRING THE INCLUSION OF TAGGANTS IN EXPLOSIVES

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## ANALYSIS OF EXPLOSIVES INDUSTRY'S EXPOSURE TO PRODUCTS LIABILITY UNDER EXISTING LAW

### Limits and Purposes of the Present Analysis

The analysis in this section covers the exposure to civil liability for damages under existing law of 1) manufacturers and other commercial suppliers of explosives; 2) manufacturers and other commercial suppliers of components that go into the production of explosives; 3) manufacturers and other commercial suppliers of accessories ordinarily used with explosives, such as blasting caps and fuses; and 4) commercial transporters and users of explosives. The analysis does not cover the commercial suppliers of a range of products sometimes referred to by legal commentators as "explosives," including firearms and ammunition, volatile and caustic fluids, fireworks, and bottled beverages.

The term "products liability" includes all civil liability for damages arising out of injury to person or property caused by unsafe, defective products, including liability based on theories of negligence, warranty, misrepresentation, and strict liability. "Products liability" does not include criminal liability, or civil liability based on express contractual obligations other than express warranty. The phrase "exposure to liability" refers to the conceptual bases and limits of liability; the author does not have access to factual data relating to frequency of claims, payouts to claimants, availability of liability insurance, and the like, in the explosives industry. The *Final Report of the Interagency Task Force on Products Liability* (Dept. of Commerce, Oct. 31, 1977) indicates that the industrial chemicals industry, the closest industry to explosives in that study, is more often than not a leader in terms of the average number of new claims per firm per year. (See Final Report, table I I I-3.)

The main objective of this appendix is to examine the products liability implications of legally re-

quiring the inclusion of taggants in explosives. Such examination can meaningfully be undertaken only in the context of an adequate understanding of the existing legal environment into which such a taggants requirement would be inserted. The analysis in this section should render such an understanding possible for those, including some members of Congress and their staffs, who may not be intimately familiar with the subject of products liability. A summary of the elements of this analysis is provided at the end of the section to facilitate review and quick reference.

### The Major Doctrinal Bases of Liability Negligence

Negligent conduct is conduct that is riskier than a reasonably prudent person would engage in. The mere fact that conduct creates risk does not make it negligent conduct. All human activities involve some risks of injury, and certain levels of risk are socially acceptable. Driving a car, for example, is a risky activity; but everyone who drives a car is not for that reason necessarily negligent, because a certain type and amount of driving is not only acceptable but necessary. It is only when a driver drives too fast, or while intoxicated, that his or her particular mode of driving behavior becomes negligent. (See generally *United States v. Carroll Towing Co.*, 159 F.2d 169 (2d Cir. 1947).)

Translating these basic notions over to the explosives industry, obviously the activities of manufacturing, supplying, and using explosives are risky activities. But they become negligent activities only if those engaging in them do not take sufficient precautions to reduce (but not necessarily to eliminate) the risks. Thus, the plaintiff who seeks to hold

the dynamite manufacturer liable in negligence for harm caused by an allegedly defective stick of dynamite will not be allowed to reach the jury unless he proves that the manufacturer failed to take reasonable steps to avoid product defects, and that as a consequence of such failure the defendant produced a defective stick of dynamite which ultimately and proximately caused the plaintiff's injuries. (See, e.g., *Soso v. Atlas Powder Co.*, 238 F.2d 388 (8th Cir. 1956).) If the plaintiff succeeds in proving these elements, then in the absence of any legal defenses (which are considered in the next section) he will be entitled to recover from the defendant manufacturer, (See, e.g., *Morris v. E.I. du Pont de Nemours & Co.*, 109 S.W.2d 1222 (Mo., 1937).)

Given the difficulties and complexities of proof in the plaintiff's attempting to demonstrate the unreasonableness of the defendant manufacturer's production methods, it is not surprising that some courts have permitted an inference of negligent manufacture to be drawn from the fact that the defendant produced and distributed a defective explosive. (See, e.g., *Dement v. Olin-Mathieson Chemical Corp.*, 282 F.2d 76 (5th Cir. 1960), applying the doctrine of *res ipsa loquitur*.) However, some courts have refused to recognize this special rule. (See, e.g., *Matievitch v. Hercules Powder Co.*, 3 Utah 2d 283, 282 P.2d 1044 (1 955), refusing to apply *res ipsa loquitur* doctrine.) Presumably, in States recognizing it, this special rule would also be available to plaintiffs in actions brought against explosives handlers. (See, e.g., *Tassin v. Louisiana Power & Light Co.*, 250 La, 1016,201 So.2d 275 (1967 ).)

These same negligence principles apply to other activities engaged in by explosives manufacturers, including marketing their products. Thus, a dynamite manufacturer will be liable in negligence for unreasonably failing to warn of hidden dangers associated with use of its products. (See, e.g., *Eck v. E. I. du Pont de Nemours & Co.*, 393 F.2d 197 (7th Cir, 1968).) And these principles apply to all other non-manufacturer suppliers of explosives with respect to their own commercial activities. Thus, a retailer who sells explosives to persons obviously incompetent to handle such risky products is negligent toward those eventually injured by an accidental explosion. (See, e.g., *Flint Explosives Co. v. Edwards*, 84 Ga. App. 376, 66 S.E.2d 368 (1 951 ).) And explosives handlers are liable for harm caused by their negligent conduct. (See, e.g., *Tassin v. Louisiana Power & Light Co.*, *supra*. See also separate section, *infra*, on explosives users. )

## Warranty

Warranties are legal obligations incurred by commercial sellers as an incident to the sale of goods, or products. They are by and large creatures of statute—in most States today, versions of the Uniform Commercial Code, article 2. Three basic types of warranties are relevant here: 1) express warranties, in which the seller actually promises that the product will perform in a prescribed manner (see Uniform Commercial Code, 2-31 3); 2) implied warranties of merchantability, in which the seller promises nothing but is held by the law “impliedly” to have warranted that its products are free from defects (see Uniform Commercial Code § 2-31 4); and 3) implied warranties of fitness for particular purpose, in which the seller knows of special requirements of the buyer, and of the buyer's reliance, and supplies a product that fails to meet those requirements (see Uniform Commercial Code 2-315). All three types of warranties have been held to accompany the sale of explosives. (See, e.g., *Hercules Powder Co. v. Rich*, 3 F.2d 12 (8th Cir. 1924), *cert. often.* 268 U.S. 692 (1924) (express warranty that fuse would burn at rate of 1 ft per m inute); *Arfons v. E. I. du Pont de Nemours & Co.*, 261 F.2d 434 (2nd Cir. 1958) (implied warranty that fuse and dynamite were nondefective); and *United States Casualty Co. v. Hercules Powder Co.*, 4 N.J. Super. 444, 67 A.2d 880, *rev'd on other grounds* 4 N.J. 157, 72 A.2d 190 (1 950) (fuse unfit for purchaser's particular purposes).)

Comparing these warranty theories with the negligence theory considered earlier, two important differences should be observed. On the *one* hand, it is not necessary for the plaintiff in a warranty case to prove, as the plaintiff must prove under negligence, that the defendant explosives seller acted unreasonably. It is sufficient that the product failed, for whatever reason, to meet the standards imposed by law at the time of sale: promised performance (express warranty); freedom from defects (implied warranty of merchantability); and suitability to purchaser's special needs (implied warranty of fitness for particular purpose). On the other hand, however, the plaintiff must prove other elements not required in a negligence case. In some jurisdictions, for example, the plaintiff must prove privity of contract—i.e., that he purchased the explosives directly from the defendant. (See, e.g., *Green v. Equitable Powder Mfg. Co.*, 95 F. Supp. 127 (W. D, Ark. 1951 ) (negligence action allowed against ex-

plosives manufacturer; warranty action barred because of lack of privity). Many courts today do not require privity to be established in products liability actions based upon warranty theories. (See, e.g., *Henningsen v. Bloom field Motors, Inc.*, 32 N.J. 358, 161 A.2d 69 (1960).)

## Misrepresentation

Misrepresentation is a tort theory of recovery that overlaps somewhat with express warranty. A main difference between them is that the tort doctrine is not dependent upon the existence of contractual privity between the plaintiff and defendant. As set forth in Restatement of Torts, Second, § 402 B, the essence of the tort is a misrepresentation (whether or not innocently made) to the public by a commercial seller of a product that harms someone who justifiably relies thereon. Commercial sellers of explosives who misrepresent their products are liable for harm proximately resulting. (See, e.g., *Marsh v. Usk Hardware Co.*, 73 Wash. 543, 132 Pac. 241 (1913).)

## Strict Liability in Tort

Strict liability in tort is liability for harm caused by defective products and ultrahazardous conduct irrespective of fault on the seller's or actor's part and irrespective of the requirements, such as privity of contract, that sometimes accompany warranty theories. Members of the explosives industry are exposed to two major forms of strict liability in tort: 1) strict liability imposed primarily on commercial transporters and users of explosives based upon the fact that those activities are considered "abnormally dangerous" (see Restatement of Torts, Second, §8519 and 520); and 2) strict liability imposed on the sellers of explosives based upon the fact of their having sold defective products (see Restatement of Torts, Second 402 A). Consideration of the first of these types of strict liability will be deferred to a later section dealing specifically with the liabilities of commercial transporters and users. The focus in this section will be on the strict liability of commercial sellers of defective explosives.

According to section 402A of the Restatement of Torts, Second, in order to recover in strict liability an injured plaintiff must establish that the product was in a defective condition unreasonably dangerous at the time it left the defendant seller's control and that such defective condition proximately caused the plaintiff's injuries. The rule applies to all commercial sellers in the chain of distribution, including retailers and wholesalers. The essential

element of proof is that the product was defective at the time of sale by defendant. Full consideration of the different ways a product can be said to be "defective" will be deferred to later sections dealing with recurring fact patterns in cases involving allegedly defective explosives. The important point here is to understand that the focus in a strict liability case is on the product, rather than on the defendant's conduct. Even if an explosives manufacturer exercises due care to avoid flaws in its explosives, it will be held liable if flaws occur and cause harm. (See Restatement of Torts, Second 402 A(2)(a).) A clear majority of American jurisdictions recognize strict liability for sellers of defective products. (See CCH Prod. Liab. Rep. 4060), and a number of courts have applied that doctrine in cases involving allegedly defective explosives. (See, e.g., *Hall v. E. I. du Pont de Nemours & Co., Inc.*, 345 F. Supp. 353 (E. D.N. Y. 1972); *Clay v. Ensign-Bickford Co.*, 307 F. Supp. 288 (D.C. Colo. 1969); *Canifax v. Hercules Powder Co.*, 237 Cal. App.2d 44, 46 Cal. Rptr. 552 (1965); *Cooley v. Quick Supply Co.*, 221 N.W.2d 763 (Iowa, 1974).)

## The Major Defenses

The major defenses available to members of the explosives industry in products liability actions fall into three basic categories: 1) disclaimers, 2) contributory fault, and 3) intervening cause. The third is not technically a defense, inasmuch as the plaintiff must prove that his injuries were proximately caused by the defendant's conduct. As a practical matter, however, the defendant raises the issue of intervening cause, arguing that the negligent conduct of explosives users constitutes a break in the chain of proximate causation. Thus, intervening cause may be treated as a "defense" for present purposes.

### Disclaimers

A disclaimer is a term in a contract purporting to exempt the disclaiming party from liability for future events to which liability would otherwise and ordinarily attach. Although no authority has been found addressing the question of the effectiveness of disclaimers in cases involving defective explosives, it is very likely that the rules which apply generally in products liability apply here as well. As a general rule, in products liability cases in which the plaintiffs are individuals physically injured by allegedly defective products, disclaimers are set aside by courts as being against public policy, whether the plaintiff seeks to recover on the basis

of negligence (see, e.g., Uniform Commercial Code § 1-102(3); R. Hursh & H. Bailey, *American Law of Products Liability* § 2:7 (2d ed. 1974)); express warranty (see, e.g., Uniform Commercial Code § 2-316(1)); implied warranty (see, e.g., *Heringsen v. Bloomfield Motors, Inc.*, 32 N.J. 358, 161 A.2d 69 (1960)); misrepresentation (see *Clements Auto Co. v. Service Bureau Corp.*, 444 F.2d 169 (8th Cir. 1971)); or strict liability (see, e.g., Restatement of Torts, Second, §402 A, comment m; *Vandermark v. Ford Motor Co.*, 61 Cal.2d 256, 37 Cal. Rptr. 896, 391 P.2d 168 (1964)). On the reasonable assumption that these same rules apply in cases involving allegedly defective explosives, plaintiffs physically injured in accidental explosions should not be barred simply because of the inclusion of disclaimer language in the contracts of sale and distribution.

On the other hand, there is more reason to expect that disclaimers will be given effect as between business entities in cases where the harm suffered is economic rather than physical. Two business entities, dealing at arms length from roughly equal bargaining positions, arguably should be allowed to allocate responsibilities between them by contract. Some courts have given effect to disclaimers in indemnity and contribution actions between business entities. (See, e.g., *Williams v. Chrysler Corp.*, 148 W.Va. 655, 137 S.E.2d 225 (1964); but see *Ford Motor Co. v. Tritt*, 244 Ark. 883, 430 S.W.2d 778 (1968).) Thus, were a large explosives distributor to seek indemnity from the manufacturer after being held liable in a products liability action brought by an injured victim of an accidental explosion, the court might give effect to a disclaimer in the contract of sale between the explosives manufacturer and the distributee.

### Contributory Fault

Certainly when the basis of the plaintiff's action against the explosives seller is negligence, contributory fault on the part of the plaintiff will reduce (or eliminate, if comparative fault is not applicable) the plaintiff's recovery, (See, e.g., *Da/by v. Hercules, Inc.*, 458 S.W.2d 274 (Mo. 1970).) When the plaintiff seeks recovery on the basis of warranty, courts today are likely to speak in terms of the plaintiff's conduct breaking the chain of proximate causation, especially when the plaintiff is shown to have been aware of the defective condition of the defendant's product. (See, e.g., Uniform Commercial Code 2-316 (3)(b), comment 8, & 2-715, comment 5.) The majority rule in products liability cases involving strict liability in tort is that only the form of contributory fault commonly referred to as

"assumption of the risk," in which the plaintiff knows or has reason to know of the defective condition of the product, will reduce or bar the plaintiff's recovery. (See, e.g., Restatement of Torts, Second, §402 A, comment n; but see *Codling v. Paglia*, 32 N.Y.2d 330, 298 N.E.2d 622, 345 N. Y.S.2d 461 (1973).) This general rule reflects a policy favoring liability of commercial sellers of defective products in all cases except those involving fairly gross behavior on the part of plaintiffs.

Examining recent products liability cases involving allegedly defective explosives sold to commercial users, it appears that courts have been sympathetic to defendants' arguments that the users of their products, rather than the products themselves, are to be blamed for the accidents. These judicial sympathies manifest themselves in several ways. Courts have been willing to weigh user misconduct fairly heavily as an independent bar to recovery. (See, e.g., *Hercules Powder Co. v. Hicks*, 453 S.W.2d 583 (Ky. 1970).) And they have been willing to give such misconduct weight in deciding that the plaintiff's circumstantial proof of product defect was insufficient. (See, e.g., *Hopkins v. E. I. du Pont de Nemours & Co.*, 212 F.2d 623 (3rd Cir. 1954), cert. den. 348 U.S. 872 (1954).) The main reason for this willingness to weigh user misconduct more heavily in explosives cases than in cases involving other types of products appears to be the fact that explosives are not, as a general rule, "consumer products" in the same sense as household appliances. (But see p. 217, *intra.*) Commercial users of explosives are generally assumed to be expert, and can be relied upon to reduce the incidence of accidental explosions. Of course, when explosive products are sold to obviously incompetent users, such as young children, contributory fault plays much less of an important role in reducing or barring the seller's liability. (See, e.g., *Wendt v. Balletto*, 26 Conn. Super. 367,224 A.2d [561 (1966).)

### Intervening Cause

The main difference between this "defense" (see earlier comment) and the defense of contributory fault just considered is the fact that in cases involving intervening cause, the plaintiffs are not the same persons who misused or mishandled the explosives. Although the victims in these cases are innocent of personal wrongdoing, they will be denied recovery against the sellers of allegedly defective explosives if the conduct of those using the explosives was so negligent as to constitute an intervening, or superseding, cause of the plaintiffs' injuries. (See, e.g., *Hercules Powder Co. v. Hicks*, 453 S.W.2d

583 (Ky. 1970.) In contrast, where an innocent third party brought a strict liability action against those in charge of storing explosives, the Supreme Court of Alaska rejected the defendant's intervening cause argument as a matter of law, even in the face of proof that vandals had broken into the storage area and deliberately set off the explosion. (See *Yukon Equipment, Inc. v. Fireman's Fund Ins. Co.* 585 P.2d 1206 (Alaska 1978).)

## Actions Against Manufacturers and Other Commercial Sellers of Explosives

The objective in this and the following sections will be to examine the significant fact patterns that tend to recur in this area. The focus will not be on legal doctrine, but on the basic fact patterns and the reactions of courts to them.

### Product Flaws

As developed earlier, an injured plaintiff stands a good chance of recovering against the manufacturer and other commercial sellers of explosives if he can prove the existence of a product defect in existence at the time of sale by the defendant. A flaw is a type of defect which consists of the inadvertent failure of a product unit, or batch of units, to conform to the intended product design. Flaws are what laypersons most often think of as "defects." The flaws most frequently encountered in explosives cases are "bad batches" — for example, sticks of dynamite some of which contain too much, and some too little, explosive ingredients due to improper mixing during manufacture.

The greatest source of difficulty confronting plaintiffs in flaw cases is not so much conceptual as practical. Because explosives always "self-destruct" in use, it is uniquely difficult for plaintiffs to obtain direct evidence of product flaws. When other types of products break unexpectedly, experts can sometimes reconstruct the products and determine the existence of flaws. But with explosives, such reconstruction is almost never possible. Consequently, plaintiffs in cases in which accidental explosions are caused by alleged flawed explosives are almost always forced to rely upon circumstantial, rather than direct, evidence of the existence of product flaws.

A classic example of how a plaintiff can successfully build a case based on circumstantial proof is presented in *Morris v. E. I. du Pont de Nemours & Co.*, 109 S.W.2d 1222 (Me. 1937). The plaintiff in that case claimed that the defendant explosives

manufacturer, through its employees, had negligently mixed a batch of dynamite so as to cause the stick used by the plaintiff to explode prematurely. The plaintiff's proof, which the court held to be sufficient to reach the jury, consisted of the following: 1) purchase of the dynamite from the defendant by the plaintiff's employer; 2) careful handling and storage of the dynamite up to the time it came into the plaintiff's hands on the day of the accident, 3) careful handling of the dynamite by the plaintiff up to the time of the premature explosion; 5) difficulties experienced by other employees with dynamite from the same batch; and 6) expert testimony to the effect that the dynamite that injured the plaintiff was unevenly mixed. Of course, because the plaintiff proceeded on a negligence theory, the record also included testimony on both sides relating to the issue of due care in manufacture. Today, under a strict liability in tort theory, this last described evidence would not be necessary. But the plaintiff must still prove the existence of a defect, even under strict liability theories. And on the issue of circumstantial proof of defect, the Morris case is still good law.

Where the plaintiff is unable to build a solid circumstantial case, courts are apt to rule in favor of the defendant manufacturer as a matter of law. Especially where there is evidence of mishandling of the explosives at the time of the accident, the plaintiff may meet with judicial disapproval regarding the sufficiency of his proof of defect. (See, e.g., *Soso v. Atlas Powder Co.*, 238 F.2d 388 (8th Cir. 1956); *Hopkins v. E. I. du Pont de Nemours & Co.*, 212 F.2d 623 (3rd Cir. 1954), *cert. den.* 348 U.S. 872 (1954).) Another source of difficulty often encountered by plaintiffs in these flaw cases is the necessity of accounting for the conditions of storage and handling between the time of sale by the defendant and use by the plaintiff. That this may even defeat claims based upon strict liability in tort is suggested by *Clay v. Ensign-Bickford Co.*, 307 F. Supp. 288 (D. C. Colo. 1969), in which the trial court concluded that the fuse was defective at the time of the explosion but held that the plaintiff failed to prove that the defect originated with the defendant manufacturer.

### Product Designs

Although products liability actions based on allegedly defective designs are escalating in frequency in many other product areas, they are relatively insignificant in actions against explosives manufacturers. Obviously, explosives are supposed to explode. When they explode prematurely, the tenden-

cy is to explore the possibility of a product flaw, or mishandling. The only type of case that could be said to involve the defective design of an explosive would be one in which the explosive was deliberately made too strong, or too weak. But even there, the tendency would be to treat such a case as involving the failure of the defendant adequately to warn users of the explosive characteristics of its products.

## Marketing

The cases involving claims by injured plaintiffs based on the manner in which explosives are marketed may be grouped into three basic categories: 1) cases in which the defendant's product fails to perform as promised by the defendant; 2) cases in which the defendant fails to warn users of hidden risks associated with its product; and 3) cases in which the defendant sells or distributes the explosives to persons who are obviously incompetent to handle them. Cases in the first of these categories may involve express warranties. (See earlier discussion, pp. 203-204, *supra*.) They may also involve negligence, as in *Raatikka v. O/in-Mathiesort Chemical Corp.*, 8 Mich. App. 638, 155 N.W.2d 205 (1967), where the seller of dynamite advised the plaintiff to use too much explosive in the primer.

By far the most significant category of marketing cases involves alleged failures to warn explosives users of risks that are not obvious. Although often based upon allegedly negligent omissions by defendants (see Restatement of Torts, Second, § 388), failure to warn is also generally recognized as a basis for imposing strict liability. (See *generally* Restatement of Torts, Second, 402 A, comments h and j.) As a general rule, manufacturers and other commercial product sellers owe a duty to warn of risks that are not likely to be obvious to persons who will foreseeably use their products, and that, with such warnings, the users are in a position to avoid. Because users of explosives are presumably knowledgeable regarding many of the risks associated with those products, the manufacturer's duty to warn tends to be drawn somewhat more narrowly than in other product areas. (See, e.g., *Croteau v. Borden Co.*, 277 F. Supp. 945 (E. D. Pa. 1968), *aff'd* 395 F.2d 771 (3rd Cir. 1968); *Hercules Powder Co. v. HiCkS/* 453 S.W. 2d 583 (Ky. 1970).)

One source of controversy concerning the explosives manufacturer's duty to warn is the question of the proper addressees of the warnings. Some courts have held that it is sufficient if the supervisory personnel in charge of directing blasting operations receive warnings, negating any requirement that the

manufacturer attempt to warn those actually using the explosives. (See, e.g., *Bryant v. Hercules, Inc.*, 325 F. Supp. 241 (W. D. Ky. 1970).) Other courts have held that the manufacturer of explosive products must attempt to warn those actually using those products of risks that may be hidden to them, notwithstanding the fact that information is supplied to the manufacturer's immediate vendee. (See, e.g., *Eck v. E. I. du Pont de Nemours & Co.*, 393 F.2d 197 (7th Cir. 1968); *Shell Oil Co. v. Gutierrez*, 119 Ariz. 426, 581 P. 2d 271 (1978).) In other product areas, with the exception of prescription drugs, courts generally require warnings to be gotten to the actual users. (See, e.g., *Hubbard-Ha// Chemical Co. v. Silverman*, 340 F.2d 402 (1st Cir. 1965) (industrial poison); *McLaughlin v. Mine Safety Appliances Co.*, 11 N.Y.2d 62, 226 N. Y.S.2d 407, 181 N.E.2d 430 (1962) (heat blocks for use in rescue operations).)

Regarding the third category of cases focusing on the explosives seller's manner of marketing its products—cases in which explosives are sold to persons obviously incompetent to handle them—retailers are occasionally exposed to liability on that basis. (See, e.g., *Wendt v. Balletto*, 26 Corm. Supp. 367, 224 A.2d 561 (1966) (sale to minor); *Flint Explosives Co. v. Edwards*, 84 Ga. App. 376, 66 S.E.2d 368 (1951) (sale by unlicensed retailer to inexperienced users).) However, courts have been reluctant to hold explosives manufacturers responsible for failing to follow up on the ultimate distribution and manner of use of their products. (See, e.g., *Doss v. Apache Powder Co.*, 430 F.2d 1317 (5th Cir. 1970); *Flint Explosives Co. v. Edwards*, 86 Ga. App. 404, 71 S.E.2d 747 (1952).)

## Actions Against Manufacturers and Other Commercial Sellers of Explosives Components

“Component” is a term of art in products liability law; in the present context it is synonymous with “ingredients.” Commercial sellers of explosives components are entities that manufacture and sell the chemical ingredients of explosives. Most often, the ingredients are sold to explosives manufacturers.

### Product Flaws

No cases have been found in which an action has been brought against a commercial seller of explosives components on the grounds that the component was flawed at the time of sale. This paucity of reported decisions undoubtedly reflects the earlier

described circumstance that most product flaws in connection with explosives occur as a result of the improper mixing of ingredients by the explosives manufacturer. (See p. 206, *supra*.) And those few instances of flawed explosives that might be theoretically traceable to flawed components would pose insurmountable problems of proof as a practical matter. However, as a matter of legal theory there is little doubt that the seller of a product component proven to have been flawed at the time of sale would be liable to persons injured because of such product flaw. (See, e.g., *Clark v. Bendix Corp.*, 345 N. Y.S.2d 662, 42 A.D.2d 727 (1973); *Barnhart v. Freeman Equipment Co.*, 441 P.2d 993 (Okla. 1968).) Whether courts would give effect to a disclaimer in the contract of sale of the component, as between the component seller and the explosives manufacturer, is not clear. (See pp. 204-205, *supra*.)

### Product Designs

Here, too, it is unlikely that a plaintiff injured in an accidental explosion would bring an action against the seller of a component based on a theory of defective design. Typically, the explosives manufacturer decides what it needs in the way of ingredients, and orders them specifically by description. The components supplied to explosives manufacturers are basic chemical compounds; it is difficult to envision a design-based theory of recovery against the component seller in the typical case.

In other product areas, suppliers of product components have been held liable for the designs of the finished product, even where the component was not dangerous by itself. A recent decision by the Supreme Court of Mississippi (*Dunson v. S.A. Allen, Inc.*, 355 So. 2d 77 (Miss. 1978)) held that the supplier of a component could be held liable when such component is intended to be used only in conjunction with a second component and when so combined, the combination of the two is unreasonably dangerous. The finished product in that case was a pulpwood cutter, and the component was a thinning shear attachment. Even though the dangers posed by the combination could be eliminated only by a modification in design of the larger machine, the seller of the component was held liable based on its knowledge of the dangers and its involvement in manufacturing a component designed specifically for use in the finished product.

In contrast, the manufacturer-seller of bulk sulfuric acid was held not to owe a duty to the general public to make sure that commercial purchasers of its product did not combine the acid with other ingredients to produce unreasonably dangerous

chemical combinations. (See *Walker v. Stauffer Chemical Corp.*, 19 Cal.App. 3d 669, 96 Cal. Rptr. 803 (1971).) The plaintiff in that case was injured when a drain-cleaning product containing the defendant's sulfuric acid exploded during use. On balance, the bulk sulfuric acid manufacturer seems closer to the seller of explosives components than does the manufacturer of the machinery component. Assuming that the explosives manufacturer is knowledgeable regarding what it wants in the way of components, and assuming that the component manufacturer delivers exactly what is ordered, it is unlikely that liability would extend to the seller of basic chemical constituents of explosives. When the seller of basic components has reason to know that the buyer is relying on the seller's judgment in recommending what type of component to use, liability may extend to the component seller. (See, e.g., *Krammer v. Edward I-lines Construction Co.*, 16 Ill. App. 3d 763, 306 N.E. 2d 686 (1974) (seller supplied wrong grade of lumber for scaffolding).) But assuming the absence of such reliance in most sales of basic components to explosives manufacturers, liability probably would not extend to the component sellers.

### Marketing

Given the presumed expertise of explosives manufacturers, it is difficult to see how sellers of explosives components in the typical instance could be held to a duty to warn of the risks associated with their products. Even when the purchaser of explosives components is an individual, liability on the basis of failure to warn will be denied if the user is an explosives expert. (See, e.g., *Croteau v. Borden Co.*, 277 F. Supp. 945 (D. C.E. D. Pa. 1968), *Aff'd* 395 F.2d 771 (3rd Cir. 1968) (plaintiff was a lab technician conducting an experiment on a solid rocket fuel component).) However, when the manufacturer of a component knows or has reason to know of the purchaser's ignorance of the risks, or knows that the purchaser is combining the component into a dangerous combination without adequate warnings to users ignorant of the risks, liability may be imposed on the component seller for failing to warn. (See, e.g., *E. I. du Pont de Nemours & Co. v. McCain*, 414 F.2d 369 (5th Cir. 1969) (liability imposed even where component sold by defendant was inert—defendant's name was on the label of the finished product).)

On balance, it is unlikely that sellers of explosives components would be liable for failure to warn in the normal situation in which the components are sold to explosives manufacturers. This

conclusion is somewhat strengthened by the earlier described reluctance of courts to impose duties upon explosives manufacturers to follow up sales of their products with efforts to reduce carelessness in their handling and use. (See p. 207, *supra*.)

### Actions Against Manufacturers and Other Commercial Sellers of Explosives Accessories

“Accessories” refers to products normally used in connection with explosives, including blasting caps and fuses.

#### Product Flaws

In contrast to the situation with regard to explosives components, a number of cases have been reported in which injured plaintiffs have sought to recover from manufacturers and other sellers of explosives accessories on the basis of product flaws. (See, e.g., *Huffstutler v. Hercules Powder Co.*, 305 F.2d 292 (5th Cir. 1962) (blasting caps); *Demerit v. Olin-Mathieson Chemical Corp.*, 282 F.2d 76 (5th Cir. 1960) (blasting caps); *United States Casualty Co. v. Hercules Powder Co.*, 4 N.J. Super. 444, 67 A.2d 880 (1949); rev'd on other grounds, 4 N.J. 157, 72 A.2d (190) (1950) (fuse).) To no less extent than other product manufacturers and sellers, commercial suppliers of explosives accessories are exposed to liability (in many jurisdictions, strict liability) for harm caused by flawed products. As in the case of explosives manufacturers, the difficulties encountered by injured plaintiffs are in proving that a defect was present at the time of sale. (See p. 206, *supra*.) Indeed, the difficulties are likely to be comparatively greater in cases involving blasting caps, due to their smaller size and relatively greater mobility, and the correspondingly greater likelihood that injured plaintiffs will be unable to prove that the product was handled normally between the time of original purchase and the time of the accident. (See, e.g., *E.I. du Pont de Nemours & Co. v. Duboise*, 236 Fed. 690 (5th Cir. 1916); *Hicks v. E. I. du Pont de Nemours & Co.*, 246 F. Supp. 589 (D.C. Okla. 1965).)

Interestingly enough, plaintiffs who have brought similar actions against fuse manufacturers appear to have fared somewhat better in reaching the jury with circumstantial proof of product defects. (See, e.g., *Hercules Powder Co. v. Rich*, 3 F.2d 12 (8th Cir. 1924); *United States Casualty Co. v. Hercules Powder Co.*, 4 N.J. super. 444, 67 A.2d 880 (1949) rev'd on other grounds, 4 N.J. 157, 72 A.2d

190 (1950). *But see Clay v. Ensign-Bickford Co.*, 307 F. Supp. 288 (D.C. Colo. 1969) (plaintiffs proved defect at time of accident but not at time of sale.) One practical difference between blasting caps and fuses that may help to explain this difference in treatment is the fact that fuse ordinarily is sold in reels, from which the users take whatever lengths are required under the varying circumstances of use. Thus, more often than in the case of blasting caps, the unused portion of the fuse may be examined for defects after the accident, and if defects are discovered the plaintiff can argue that the fuse that caused the accident had the same defects. Another reason plaintiffs may fare better in fuse cases is the fact that eyewitnesses are able to testify regarding the behavior of the fuse at the time of the accident, in ways that directly point to the existence of a defect. (See, e.g., *Hercules Powder Co. v. Rich*, *supra*, (fuse burned too quickly); *Cooley v. Quick Supply Co.*, 221 N.W.2d 763 (Iowa, 1974) (user could not tell if fuse was burning).)

#### Product Designs

Design cases would appear more likely to arise here than in the case of explosives and components, given the somewhat more mechanical nature of some accessories. For example, one can envision an action being brought on the ground that a particular type of blasting cap was designed so as to allow accidental detonation too easily. However, no reported cases have been found in which the plaintiff proceeded against the manufacturer or other commercial seller of an explosives accessory on the basis of an allegedly defective design.

#### Marketing

Injured plaintiffs have brought actions against accessory manufacturers and sellers on the ground that adequate warnings did not accompany the products into the hands of the ultimate users. With respect to fuses, plaintiffs typically argue that they were not adequately warned of the burning characteristics of the products. Especially where the fuse is sold as “safety fuse,” such arguments have been successful. (See, e.g., *Canifax v. Hercules Powder Co.*, 237 Cal. App.2d 44, 46 Cal. Rptr. 552 (1965); *Cooley v. Quick Supply Co.*, 221 N.W.2d 763 (Iowa 1974).) The plaintiffs in the blasting cap cases have more frequently been persons outside the class of professional users originally intended by the manufacturer to use the products, who have argued that the defendant failed adequately to warn against the possibility of the caps exploding accidentally.

Reflecting the tendencies for courts to refuse to extend the responsibilities owed by explosives manufacturers (see p. 205, *supra*) and components manufacturers (see p. 208, *supra*) to untrained, incompetent persons into whose hands these dangerous products sometimes come, some courts have refused to hold blasting cap manufacturers for failing to label their products as explosives. (See, e.g., *Ball v. E. I. du Pont de Nemours & Co.*, 519 F.2d 715 (6th Cir. 1975); *Littlehale v. E. I. du Pont de Nemours & Co.*, 380 F.2d 274 (2d Cir. 1967).) However, at least one court has not only recognized the duty of blasting cap manufacturers to warn children of the explosive nature of their products, but has suggested that injured plaintiffs may join in a single tort action against all major members of the blasting cap industry, together with their trade association. (See *Hall v. E. I. du Pont de Nemours & Co., Inc.*, 345 F. Supp. 353 (E. D.N.Y. 1972) .)

### Actions Against Commercial Transporters and Users of Explosives

Commercial transporters and users of explosives are subject to strict liability for harm to persons

and property caused by their activities to an extent that in some ways can be said to exceed the strict liability of sellers of defective products. Although this rule is not strictly speaking a rule of "products liability," it deserves brief mention in this analysis. The general rule is set forth in sections 519 and 520 of the Restatement of Torts, Second. In essence, persons engaged in activities considered to be "abnormally dangerous" are strictly liable without regard to the degree of care exercised. The rule applies whether or not the abnormally dangerous activity is commercial; but a clear majority of its applications involve commercial activities. A number of courts in recent years have imposed strict liability in tort for harm to the persons and property of others caused by transporters and users of explosives. (See, e.g., *Ward v. H. B. Zachry Const. Co.*, 570 F.2d 892 (10th Cir. 1978); *Yukon Equipment, Inc. v. Fireman's Fund Ins. Co.*, 585 P.2d 1206 (Alaska, 1978) (storers of explosives strictly liable even when explosion caused by vandals); *Iannone v. Cayuga Const. Corp.*, 411 N. Y.S.2d 59966 A.D.2d 745 (1978) (blasters strictly liable). Cf. *O'Connor v. E.J. DiCarlo & Sons, Inc.*, 378 N.E.2d 695 (Mass. 1978) (consequential damage from blasting is actionable only on proof of negligence). )

## HOW WOULD THESE EXPOSURES TO LIABILITY CHANGE IF CONGRESS REQUIRED THE INCLUSION OF TAGGANTS IN EXPLOSIVES?

### Factual Assumptions

A number of factual assumptions will be carried through the following analysis of the potential changes in the products liability exposure of the explosives industry. At the end of the analysis, each assumption will be hypothetically altered to permit consideration of alternative outcomes. These assumptions are included here to render manageable what follows. They are not meant to reflect any judgment by the author regarding the merits of the issues to which they relate.

Congress will require the inclusion of both identification and detection taggants. Identification taggants are small pieces of coded material, capable of surviving an explosion in sufficient numbers to be retrieved mechanically. They are mixed with the other ingredients of explosives at the time of manufacture. When retrieved following an explosion, they allow the manufacturing source and date of manufacture of the explosive to be determined.

Detection taggants are small pieces of material that emit traces of a gas capable of being detected by sensors. Explosives containing detection taggants presumably could be discovered prior to detonation by the use of gas-sensitive monitoring devices. Although the author understands that detection taggants are still in the relatively early stages of development, the present analysis will assume their required inclusion in the interest of completeness.

The designs of the taggants required to be included will be specifically described by regulation. Two basic regulatory approaches are available by which to describe the taggants which would be required to be included in explosives: 1) design standards, in which the design specifications of the taggants are described with relative specificity; and 2) performance standards, in which the taggants are described in terms of expected performance — e.g., their capability of being retrieved after an explosion, or detected before one. With respect to most consumer

products, performance standards are preferred over design standards because they leave the producers relatively free to provide consumers with choices among designs. In the present context, however, it may be assumed initially that uniformity in the design of taggants is more desirable than variation, and therefore that design standards will be adopted by regulation after adequate testing.

Congress will exclude black and smokeless powders from the list of explosives required to contain taggants. The following analysis will focus on solid explosives, such as dynamite. Because the inclusion of taggants in explosive powders could present somewhat different products liability issues, that possibility will be deferred until later.

Government-supervised testing indicates explosives containing taggants are “safe” for normal handling. The assumption here is that Congress will not require the inclusion of taggants in explosives if testing reveals accompanying safety hazards. However, the word “safe” must be put in quotations because of the inherent limits of any testing program — all possible conditions of use cannot be anticipated and tested against. Thus, notwithstanding this assumption, experts are likely to be available to plaintiffs who will testify in good conscience that on the facts of a particular case the taggants played a role in causing an explosion involved in a particular case.

Taggant manufacturers will sell the taggants directly to explosives manufacturers. The author is aware of a proposal to have the Federal Government purchase taggants and then sell them to explosives manufacturers. That alternative will be addressed in a subsequent section.

Congress will provide no special immunities or other legislative adjustment of liabilities. Again, the author is aware of suggestions that Congress adjust the exposures to liability of members of the explosives industry, and will return to consider those possibilities in a later section.

### Changes in Explosives Manufacturers' and Sellers' Exposures to Liability

In the following analysis, the question of whether these manufacturers and sellers of explosives can successfully raise as a defense the fact that they are required by law to include taggants in their products will be deferred until the underlying questions of whether injured plaintiffs could succeed in proving defects have been addressed.

### Claims That the Taggants Caused Accidental Explosions—Proof of Defect

At the outset, it must be recognized that in cases in which injured plaintiffs claim that taggants caused accidental explosions, technically they will be asserting alleged defects in design rather than in production. It will be recalled from an earlier discussion that a flaw consists of an inadvertent failure of a product unit to conform to the intended product design. (See p. 206, *supra*.) Because taggants are to be included in explosives intentionally, technically they are not flaws, but part of the product designs. Will, or should this circumstance make a difference in the way courts react to the plaintiff's proof and arguments in cases involving accidental explosions? Functionally, taggants that are proven to cause accidental explosions are quite flaw-like. (The question of whether plaintiffs will actually succeed in proving that the taggants caused the explosions will be addressed shortly.) That is, from the point of view of the injured user of the explosives, the taggants would act very much like flaws — i.e., they would constitute bits of “foreign” material that would not enhance, but rather would detract from, the intended performance of the explosives. Presumably, any instability produced by their inclusion would be a feature against which normally careful handling would constitute inadequate protection. On the assumption that their inclusion causes accidents, they would be the functional equivalent of “designed-in flaws.”

The interesting question is whether, putting to one side the functional equivalency of these taggants to product flaws, defendant manufacturers would be permitted to argue, as a matter of public policy, that the benefits to society at large sufficiently outweigh the risks presented to explosives users as a justification for the inclusion of taggants. (Again, the narrower question of whether it should matter that the Government forces this decision on explosives manufacturers will be deferred until later.) What makes this question particularly intriguing is the fact that influential legal commentators have recognized that a “cost-benefit” analysis is appropriate in determining whether product designs are unreasonably dangerous. (See, e.g., Wade, *On the Nature of Strict Tort Liability for Products*, 44 *Miss. L.J.* 825 (1973).)

On balance, the circumstances surrounding the inclusion of taggants in explosives appears to be sufficiently different from most cases involving allegedly defective product designs to cause this

writer to doubt that courts would give much weight to such policy arguments on behalf of defendants. In most product design cases, the risks and benefits to be balanced off against each other accrue to the same more or less limited group of persons atypically, the product users. With respect to taggants, the group put to risk—the users—are a much smaller group than the group benefited—society at large. In product design cases in which one distinct group is benefited and another put at risk, courts have tended to impose liability on product designers, in part on grounds of basic fairness. (See, e.g., *Passwaters v. General Motors Corp.*, 454 F.2d 1270 (8th Cir. 1972).) Admittedly, in most cases of this sort the nonusers are the ones who are put to risk and the users the ones who benefit. But it would not be surprising if courts were to react similarly in these taggant cases, where the situation is the reverse.

Taking these considerations together—the functional similarity of taggants to production flaws (presumably, they cause the product suddenly and without warning to self-destruct) and the general tendency for courts in products liability cases to be suspicious of allowing one group of persons to be put at risk so that a different group can benefit—it is likely that courts would treat these cases as they would treat flaw cases. That is, if the plaintiff succeeds in proving that the taggants caused an accidental explosion, the plaintiff will have proved the product to be defective and unreasonably dangerous notwithstanding efforts of manufacturers to argue “the greater good for the greater number.” This conclusion draws support from the increasing reliance by courts and commentators on the test of “reasonable consumer expectations” to determine the defectiveness issue. (See *generally* Restatement of Torts, Second, 402 A, comment i; Hubbard, Reasonable Human Expectations: A Normative Model for Imposing Strict Liability for Defective Products, 29 Mercer L. Rev. 465 (1978).) Certainly from the point of view of the user of explosives, a stick of dynamite that explodes unexpectedly and without fault on the user’s part could be said to fail to meet that user’s “reasonable expectations.” (For a consideration of the efficacy of warning users that the explosives may accidentally explode, see pp. 216-217, *infra*.)

Assuming that a plaintiff will succeed in establishing a prima facie case if he can prove that the taggants caused the accidental explosion, it remains to be considered whether it is likely that he will succeed in his proof. It will be recalled from an earlier treatment of the liability of explosives manufacturers and sellers that the major problem con-

fronting injured plaintiffs in cases involving product defects is establishing the existence of a defect by means of circumstantial evidence. (See p. 206, *supra*.) Would the required inclusion of taggants in explosives reduce those difficulties or proof? That is, putting aside for a moment the question of whether defendants would be allowed to raise as a defense the fact that they are required by law to include taggants in their products, (see pp. 215-216, *infra*.) would plaintiffs be more likely to reach triers of fact with arguments that the explosives themselves, rather than mishandling, caused the accidental explosions?

Although the magnitude of the reduction in plaintiffs’ problems of proof brought about by the inclusion of taggants cannot be predicted with any degree of certainty, the answer to this question is almost certainly, “Yes, plaintiffs’ problems of proof would be reduced.” In accidental explosion cases up to now, plaintiffs almost invariably have been unable to offer direct evidence of the presence of foreign material due to the fact that the explosives in question “self-destruct” in use. Once taggants are required to be included, direct proof of their presence will almost always be available—indeed, their presence based on the Federal requirement would probably be presumed.

Of course, the mere fact of the inclusion of the taggants in the explosives would not make a case for an injured plaintiff unless there were proof that the taggants caused the explosion. Would such proof be available to plaintiffs in the face of extensive, Government-supervised product testing showing taggants to be “safe”? In part, the answer here depends on a factor difficult for this writer to predict at this time—i.e., the degree of unanimity among scientific professionals on the question of whether taggants may pose risks of accidental explosions. On the reasonable assumption that in this instance, as with most relatively novel technical questions relating to probable risks, some division of opinion is likely to be present among experts, then the proof needed by plaintiffs will likely be available in the form of expert testimony. In general, this expert testimony could be expected to take two basic forms: 1) testimony that the presence of even a “normal” concentration of taggants caused the accidental explosion; and 2) testimony that in a given case an “abnormal” concentration of taggants was present and caused the explosion.

Regarding the first form of expert testimony, on the assumption that some members of the scientific community believe that taggants may at least contribute to instability under certain conditions, a qualified expert will probably be available who is

willing to testify in good conscience that based on the surrounding circumstances, including proof of careful handling, the presence of normal concentration of taggants caused the accidental explosion. Without the taggants, the plaintiff's expert would be forced to rely more heavily on speculation regarding the presence of explosion-inducing foreign material, making it easier for the judge to intervene on behalf of the defendant as a matter of law. With the inclusion of the taggants, the expert could more easily anchor his opinion to a specific hypothesis. Courts would continue to direct verdicts for defendants in cases where the plaintiff's other circumstantial proof was weak. But the presence of the taggants could be expected to cause this to happen somewhat less frequently. However, if in a case there is nothing, or almost nothing, in the way of circumstantial evidence of what caused the explosion, opinion of an expert that the explosion "may have been caused" by the taggants is unlikely to be sufficient, standing by itself, to support a conclusion of causation. (See *generally* 2 F. Harper & F. James, *The Law of Torts* 1117-1118 (1956).)

With regard to the second form of expert testimony, to the effect that an abnormally high concentration of taggants caused the accidental explosion, the possibility exists that high concentration could be established by evidence other than the fact of the explosion itself: either the expert could testify to an abnormally high number of taggants recovered at the explosion site; or the expert could testify to an abnormally high concentration of taggants in other undetonated explosives from the same lot, which should be more easily traceable given the taggant requirement. (It should be observed that proof of an abnormally high concentration would be proof of a "flaw" in the classic sense—see p. 206, *supra*.) If either type of independent proof of an abnormally high concentration were available, the plaintiff would very probably reach the trier of fact on a defect theory. In addition, the plaintiff should reach the trier of fact if the taggants recovered were shown to be too large, or otherwise misshapen in ways that could contribute to accidental explosions. If no such independent evidence were available, as a practice matter it is difficult to see how the plaintiff's case would be strengthened simply by an assertion that a high concentration of taggants, or odd-shaped taggants, existed. With no direct evidence of the existence of flaws, the mere fact of explosion ought not to suffice to permit the trier of fact to conclude that the explosive was defective. Admittedly, the fact that taggants are present in the explosives in the first

place adds "one more thing that can go wrong." But in the absence of independent proof of high concentration, (which, perhaps significantly, the special recoverability of taggants would help make possible), as a practical matter the plaintiff's case would only be as strong as his circumstantial evidence.

In connection with the foregoing analysis of the effects of the presence of taggants on the plaintiff's proof of defect, it should be noted that the utility to the plaintiff of the first type of expert testimony—testimony that a normal concentration of taggants caused an accidental explosion—depends on the assumption made at the outset that explosives manufacturers would not succeed in raising "Government coercion" as a defense. If manufacturers were to succeed with that defense, then it would be to their advantage, and not the advantage of plaintiffs, to blame accidental explosions on normal concentrations of taggants,

### Claims That Detection Taggants Failed to Function Properly

The basic fact pattern envisioned here is one in which the plaintiff claims to have been injured by an illegal use of explosives because detection taggants failed to operate to prevent the explosives from being used illegally. This sort of case raises a host of issues that are probably not worth pursuing in-depth at this point given the fact that detection taggants are very much more in the development stage than are identification taggants. It will be useful, however, to sketch the basic framework of analysis.

It will be recalled from an earlier discussion that normally explosives manufacturers are not liable for harm caused by abnormal uses of their products. (See p. 207, *supra*.) Thus, if dynamite were used by a terrorist in such a way as to harm others, the manufacturer of the dynamite would not be liable even if the dynamite could be traced to its source. However, the situation might be different in connection with detection taggants. That is, if an injured plaintiff were to prove that a detection taggant failed to function as intended, allowing the plaintiff to be harmed under circumstances where an adequate performance by the taggant would have prevented the harm, the manufacturer of the explosives in question might be exposed to liability for having sold a flawed product. In a somewhat analogous situation, courts have imposed liability for explosion damages on commercial sellers of bottled gas containing insufficient odoriferous contaminant to permit detection of the gas in the air by

sense of smell. (See *genera//y* Annotation, Duty and Liability in Connection With Odorization of Natural Gas, 70 A. L. R.3d 1060 (1 976). ) To be sure, the defendants in a detection taggant failure case would have an argument of intervening cause, based upon the criminal conduct of the users of the explosives. (See, e.g., *Watson v. Kentucky & Ind. Bridge & Ry. Co.*, 137 Ky. 619, 126 S.W. 146 (1910); see *genera//y* P.P. 205-206, *Supra.* ) However, the Supreme Court of Alaska recently imposed strict liability on a storer of explosives, notwithstanding the fact that the explosion was deliberately set off by thieving vandals. (See *Yukon Equipment, Inc. v. Fireman's Fund Ins. Co.*, 585 P.2d 1206 (Alaska 1978). See *a/s/o K/ages v. Genera/ Ordnance Equipment Corp.*, 367 A.2d 304 (Pa. Super. 1976) (plaintiff watchman was criminally assaulted after mace gun failed to subdue an attacking felon).)

A major difficulty facing plaintiffs in such cases would be proving the existence of a product defect. Rival hypotheses as to the cause of the breakdown in detection would include: 1 ) explosives aged beyond the useful life of the detection taggants; 2) explosives somehow "cleansed" of detection taggants; 3) explosives that never contained detection taggants in the first place (not included in taggant requirement, homemade, illegally imported, or pre-tagtagants); 4) enclosure of explosives in container that "defeated" taggants (might expose manufacturer to design or failure to warn liabilities); 5) breakdown in detection devices (court might hold explosives manufacturer and device manufacturer jointly liable); and 6) breakdown in personnel in charge of detection operation. Although the list appears formidable, some of these hypotheses might be eliminated by independent evidence. If such evidence were available, an injured plaintiff might reach the trier of fact in an action against the explosives manufacturer.

### Significance of the Fact That Manufacturers Are Required by Law to Include Taggants

The question to be considered here is whether defendant manufacturers and sellers of explosives could argue effectively in defense of liability for accidental explosions that the taggants were required by law to be included in their products. In addressing this issue, the discussion will first center on the basic analytical principles involved, apart from considerations of the extent to which a Federal taggants requirement should be given deference over the products liability law of the States.

Thereafter, attention will focus upon the question of possible preemption of State law.

A possible source of confusion may be eliminated at the outset. The fact that these taggant cases are technically design cases, discounted in importance in the earlier discussion of whether manufacturers would be allowed to escape liability on the basis of their actions promoting "the greater good," is here highly relevant. By hypothesis, when the Government orders products made to Government design specifications, the defense here being considered is limited to those aspects of the manufacturer's product that conform to those design specifications. Whether the manufacturer will be liable for product units that do not conform to the Government design specifications —e.g., individual sticks of dynamite that contain too high concentrations of taggants—may be relatively less affected by the fact that the Government has requested, or dictated, the relevant design. Thus, in *Foster v. Day & Zimmerman*, 502 F. 2d 867 (8th Cir. 1974) an army reservist recovered from the manufacturer of a flawed hand grenade notwithstanding the fact that the hand grenade had been made according to army design specifications.

One area in which courts have frequently addressed the possibility of a defense to tort liability based on conformance to Government-imposed design requirements involves products made to Government contract specifications. It can be argued that the defendants in these contract specification cases were not "required" by law to produce the products later alleged to be defective, in the same sense that the explosives manufacturers would be "required" to include taggants in explosives. To some extent, however, that distinction gives way under analysis. It is a fact of economic life that the companies who produce the sorts of products typically purchased in large quantities by Government cannot survive without getting their share of Government business. Moreover, as a technical matter even the explosives manufacturers are not being *required* to produce explosives containing taggants—they are "free" to decide not to sell explosives at all. Thus, the products liability cases involving the availability to producers of the "made to Government specification" defense are relevant to the present analysis. Indeed, to the extent that the degree of coercion is marginally less in the contract cases, judicial recognition of such a defense in that context provides that much stronger support for a defense in the context of a statutory taggants requirement.

A decision frequently cited for the proposition that a manufacturer will not be liable for the design

characteristics of a product made to Government specifications is *Littlehale v. E. I. du Pont de Nemours & Co.*, 380 F.2d 274 (2d Cir. 1967), aff'ing 268 F. Supp. 791 (S. D.N. Y. 1967). The plaintiff in that case was a civilian employee injured by a special type of blasting cap made 13 years earlier by the defendant to Government design specifications. The district court entered summary judgment in favor of the defendant, stressing the fact that the product design was dictated by the Government. The court of appeals affirmed, emphasizing the lack of any duty to warn such an unforeseeable user. (It appears the plaintiff had begun by combining flaw, design, and warning theories, but abandoned the first two during trial.) Subsequent decisions have tended to question whether the *Littlehale* decision actually supports the principle that a product cannot be defective by reason of those of its design characteristics that conform to design specifications dictated by the Government. In *Su-chromajcz v. Hummel Chemical Co.*, 524 F.2d 19 (3rd Cir. 1975), for example, the court read *Littlehale* as standing for the principle that a manufacturer's duty to warn is limited to foreseeable users.

A recent decision that cites *Littlehale* for the "Government specifications is a defense" principle is *Sanrter v. Ford Motor Co.*, 144 N.J. Super. 1, 364 A.2d 43 (Law Div. 1976), aff'd per curiam 154 N.J. Super. 407, 381 A.2d 805 (1977), pet. cert. denied 75 N.J. 616, 384 A.2d 846(1978). The plaintiff in that case was a civilian driver of a Government surplus Jeep, injured in a rollover accident, who claimed that the design was defective because it lacked seat belts. The trial court denied recovery as a matter of law, chiefly on the ground that the design conformed to Government specifications, met the special purposes for which the military originally had ordered and purchased it, and therefore was not defective. And in *Hunt v. Blasius*, 55 111.App.3d 14, 12 Ill. Dec. 813, 370 N.E.2d 617 (1977), aff'd 74 111.2d 203, 23 Ill. Dec. 574, 384 N.E. 368 (1978), the court ruled as a matter of law for the defendant manufacturer and installer of a roadside signpost whose allegedly defective design conformed to specific design specifications imposed as a condition of purchase by the State.

Several possible limitations on the availability of these precedents to explosives manufacturers in the present context must be noted. First, an exception to the general rule of nonliability would almost certainly be recognized in cases where the manufacturer knew or had reason to know that the Government specifications were dangerously deficient. (See *Ryan v. Feney & Sheehan Building Co.*, 145 N.E. 321 (NY. 1924).) Admittedly, cases recog-

nizing this exception have tended to be ones in which the defendant could be said to have "volunteered" its services; and in the cases envisioned by courts to fall into the exceptional category, the Government agencies are probably ignorant of the deficiencies of the designs. Neither of these circumstances appear to be present in connection with the inclusion of taggants, and thus the exception to the nonliability rule probably does not apply.

A second caveat is based on the fact that both the *Sanner* and *Hunt* decisions, *supra*, are distinguishable on their facts from the taggants case on another ground besides the fact that the design requirements were not imposed by statute. In those cases, and in most of the others that have recognized the non liability rule, the Government agencies purchased the products exclusively for their own use. To impose liability on the product suppliers would be, in effect, to impose liability on the governmental agencies by way of an increase in prices paid for products designed specifically and exclusively for Government use. The initial assumption here is that the Federal Government will not limit the application of the taggants requirement to products for its own use. Thus, were explosives manufacturers held liable for harm caused by the inclusion of taggants, the accident costs would be shared by all users of explosives; Government operations would be "singled out" to bear the costs of taggant-related accidents.

It remains to consider the significance of the fact that the taggants requirement is imposed by statute rather than by contract. In this connection, one possible source of confusion must be eliminated. A long-recognized rule in tort law is that compliance with Government safety regulations is no bar to liability for one's negligent conduct. (See Restatement of Torts, Second, S 288(c).) That proposition, however, is very different from the one here being considered. The rule in 288(c) relates to the situation in which the Government mandates a certain level of safety precautions, and a reasonable person would take additional precautions. The rule of non-liability being considered here relates to the very different situation in which the Government mandates action which a court would, in the absence of the mandate, find to be negligent. It is one thing to hold an actor liable for not being safer than the Government minimally requires him to be; it is quite another to hold an actor liable for a dangerous course of conduct which his Government requires him to take. In the first case, the governmentally imposed requirement leaves the actor free to decide whether to act more safely than the Govern-

ment requires; in the second, the requirement does not leave him free to make that decision.

The main difference theoretically between the Government imposing design specifications by contract and by statute lies in the legislature's power to change the common law by the latter, but not the former, method. Thus, when taggants are required by statute to be included in explosives, in addition to considering whether it is fair to hold the defendant liable for complying with the requirements of his Government, courts must consider whether the legislature has, by implication, changed the common law rules that determine liability. Viewed properly, the question is whether the taggant requirement reflects a legislative judgment on the same issue that the courts are being asked to resolve in the liability action. If it does, then courts are required (putting constitutional aspects to one side for the moment—see pp. 222-223, *infra*) to give deference to the legislative judgment. In many instances of Government-imposed design changes, a legislative judgment that the design changes will increase the safety of those affected by the product could be inferred from the fact of the mandated change. To hold a defendant liable in tort for doing something the legislature has decided is safer than not doing it would be contradictory.

Is the taggant requirement similar to these other safety requirements? That is, does that requirement reflect a legislative judgment that their inclusion reduces—or at least does not increase—the risks of accidental explosions? Given the legislative history of the measure, it could be argued that it does not reflect such a judgment. Indeed, it can be argued that the taggant requirement reflects a legislative decision actually to increase slightly the risks of accidental explosions in the interests of increasing public safety against intentionally criminal explosions. (See discussion, pp. 211-212, *supra*.) If the courts were to view the taggant requirement in this way, presumably they would be free to address for themselves the question of liability for those increases in risks.

Assuming that some courts, at least, do not feel themselves bound by an implicit judgment by the legislature regarding the reasonableness of taggant inclusion from the standpoint of user safety, whether the "Government requirement" defense will be available in taggant cases brought against explosives manufacturers will probably depend on whether those courts view products liability primarily as a means of deterring unreasonable conduct, or as a means of compensating innocent accident victims. If the focus is on deterring unrea-

sonable conduct, the defense will probably be available; after all, holding manufacturers liable will not cause them to violate Federal law. On the other hand, if the focus is on compensation, it is more difficult to see the direct relevance of the taggant requirement. If manufacturers are forced to pay for harm caused to innocent victims by unstable products, in the end society will bear the costs through higher prices paid for the goods and services whose production requires the use of explosives. To the extent that members of this larger segment of society are generally the ones who also benefit from the anticriminal aspects of taggant inclusion, the results of imposing liability may seem fairer to some courts than the results of denying liability. To some extent, even a denial of liability would cause accidental explosion costs to be reflected in the prices of goods and services, the production of which is dependent on the use of explosives. Commercial users of explosives, for example, presumably insure themselves against portions of the costs of accidental explosions, and pass the insurance costs on to their customers. And commercial users are liable to others injured by their activities. (See p. 210, *supra*.) However, the imposition of liability on explosives manufacturers would seem to accomplish the cost-spreading objective more fully.

One further issue must be addressed in connection with the possibility of a "Government specifications" defense. Because the inclusion of taggants would be required by Federal law, courts applying State law rules of products liability would be required to determine whether the Federal law had "preempted"—superseded—State law. The substance of such an analysis would be essentially similar to the analysis just described when a State statute is involved. The major difference would be that the Federal courts would become involved in reviewing the State court decisions interpreting the intent of Congress.

## The Efficacy of Warnings and Disclaimers

It is most unlikely that explosives manufacturers would be allowed to exempt themselves from liability by disclaimers included in their sales contracts. (See pp. 204-205, *supra*.) Would warnings fare any better in court? That is, would manufacturers be allowed to escape liability by warning users that their explosives contain explosion-inducing taggants? Again, the answer here is likely to be in the negative. It will be recalled from an earlier discussion that warnings serve to apprise persons of risks which they are in a position to avoid. (See p.

207, *supra.* ) Presumably, users of explosives containing taggants would not be in a position to avoid taggant-related risks by modifying their use of explosives. In effect, manufacturers would be warning users that flaws exist which may, more or less on random basis, cause harm. Viewed in this light, such “warnings” appear to be more like “disclaimers in warning cloth ing,” and presumably would not be given legal effect by many courts. However, it is to be expected that sales of explosives would be accompanied by such “warnings,” and it cannot be said with certainty that some courts would not bar recovery on that basis, (Or perhaps on the basis, equally dubious on these facts, that the users “assumed the risks” of accidental explosions. See p. 205, *supra.* )

### Changes in Explosives Handlers Exposures to Liability

It will be recalled from an earlier discussion that professional users and handlers of explosives are held to particularly high standards of care, approaching strict liability in some jurisdictions, (See p. 210, *supra.* ) The addition of identification taggants could have four types of effects on their exposures to liability. First, to the extent that they are already held strictly liable, an increased incidence of accidental explosions would as a practical matter increase their strict liability. Second, to the extent that the inclusion of taggants were to require special care in handling, explosives users would presumably be exposed to great negligence-based liability. Third, the inclusion of taggants would facilitate tracing explosives detonated by terrorists (or by children, into whose hands the explosives came) to their sources, opening up the possibility of an argument of inadequate care taken to prevent the escape of such dangerous instrumentalities. And finally, the presence of taggants might provide the basis for users of explosives to escape negligence-based liability by blaming accidental explosions on the taggants, and might allow explosives users to succeed in indemnity actions against explosives manufacturers.

### Exposure to Liability of Taggant Manufacturers

#### Claims That the Taggants Caused Accidental Explosions—Proof of Defect

The question of whether plaintiffs will succeed in proving that taggants caused accidental explo-

sions was addressed in the preceding section and the analysis will not be repeated here. Assuming that some plaintiffs succeed in linking taggants to accidental explosions, what will be the taggant manufacturers’ exposure to liability? Presumably, if a plaintiff proves that a particular batch of taggants was abnormal in some way— perhaps the pieces were too big, or varied too greatly in size— he would have a good chance of reaching the trier of fact with a claim based on a flawed component. (See pp. 207-208, *supra.* )

If no such proof of abnormal taggant configuration were available, the plaintiff would be left to proceed on the basis that the taggant manufacturer supplied a defectively designed component part. The defendant would argue that it is in the same position as the supplier of any basic ingredient supplied in bulk to a product manufacturer— if the combination of ingredients turns out to be dangerously defective, it is the product manufacturer’s, and not the component part manufacturer’s, responsibility. It will be recalled from an earlier discussion that suppliers of traditional ingredients of explosives would probably succeed with such an argument. (See p. 208, *supra.* ) However, courts may view the taggant manufacturer as being closer to the manufacturer of the machine component in the *Dunson* decision discussed earlier (p. 208, *supra.* ) The defendant in that case was held liable for a “dangerous combination of components” on the basis of its knowledge of the dangers and its involvement in manufacturing a component designed specifically for use in the final product.

In response to plaintiffs’ attempts to draw them into the orbit of responsibility for the (presumably) dangerous and defective explosives containing taggants, taggant manufacturers could be expected to argue that they did not design their product specifically for use in explosives, but rather as a product of many and varied industrial applications. Viewed in this manner, they would appear closer to the sellers of basic, general-purpose ingredients of explosives. They could also be expected to rely on the disclaimers included in their contracts of sale which, when reviewed in light of this analysis, appear consciously designed to “build a record” to support their assertions of a general-purpose product. However, it might be shown that taggant manufacturers would never have gotten into the manufacture of taggants in the first place without the prospect of their being required to be included in explosives, notwithstanding their protestations to the contrary. (This writer lacks information on this issue— he advances these considerations merely as possibilities.)

## Claims That Detection Taggants Failed to Function Properly

On the assumption that it could be proved that detection taggants failed to function properly (see pp. 213-214, *supra*), plaintiffs injured because of such failures might have causes of action against the manufacturers of those taggants. (For a discussion of the liability of component manufacturers generally see pp. 207-208, *supra*.) Some of the difficulties facing plaintiffs in such actions have already been described. (See pp. 213-214, *supra*.)

## Significance of the Fact That Explosives Manufacturers Are Required by Law to Include Taggants

Much of the legal material relevant to this issue is contained in the earlier treatment of explosives manufacturers' liabilities, and will not be repeated. (See pp. 214-216, *supra*.) At least two factual differences in the positions occupied by taggant manufacturers in contrast to explosives manufacturers deserve attention: 1) taggant manufacturers, unlike explosives manufacturers, are not required by law to be involved with taggants; and 2) taggants manufacturers, unlike explosives manufacturers, exercise control over the design of the taggants. Do these differences suffice to take taggant manufacturers out of the rule of nonviability that may apply to explosives manufacturers based on the fact of Government regulation?

In attempting to persuade a court that the nonviability rule based on Government specifications ought not to extend to taggant manufacturers, (even if the court decides to extend it to explosives makers) a plaintiff might argue as follows: "No one, including the Government, urged (much less required) taggant manufacturers to begin to develop such a product. Sensing a substantial profit to be made, those manufacturers *on their own* developed the taggant designs in question, patented them, and then worked diligently to persuade Congress to require them in explosives. In the cases relied upon by the defendants (see pp. 214-215, *supra*), the Government went to the producers and requested bids on specifically described projects. The Government did not exactly require the manufacturers to produce the products; but it is an economic fact of life that producers of most products rely for their survival on getting their share of Government contracts. (Indeed, as a technical matter explosives manufacturers are not required to include taggants — they are "free" to choose to go out of business.) Moreover, in the cases relied on by the de-

fendants, the Government made all the significant design choices. If taggant manufacturers are allowed to invoke the nonviability rule, the court will have extended the excuse of "we had no control over the design" to companies that in fact dreamed up the idea of explosives taggants in the first place, controlled completely their development and ultimate design, and then with substantial effort convinced Congress to require other manufacturers to include them in their products under penalty of law."

The writer wishes to make clear that in advancing this argument hypothetically, he takes no position regarding its intrinsic merit. Whether courts would listen to such an argument is a different question. On balance, this writer is inclined to believe some of them, at least, would accept it, and not allow the taggant manufacturers to argue that they should not be liable because they made the taggants to Government specifications.

## The Efficacy of Disclaimers

It is likely that the taggant manufacturers' disclaimers would not be given effect as disclaimers in actions brought by injured plaintiffs. (See pp. 204-205, *supra*.) Whether they would be given effect in the context of contribution or indemnity actions between themselves and explosives manufacturers is less clear. It will be recalled from an earlier discussion that business entities dealing from equal bargaining positions are often left by courts to allocate liabilities between them. (See p. 205, *supra*.) However, it is not clear that the bargaining positions in this instance are equal, given the fact that the explosives manufacturers cannot go without taggants. In a sense, the taggant manufacturers would have the explosives manufacturers "over the barrel," and courts might refuse to give effect to disclaimers for that reason.

## Returning to the Initial Factual Assumptions

The objective here is to return briefly to some of the factual assumptions made at the beginning of this second section, to consider the implications of alternative assumptions. The first assumption, that Congress will require the inclusion of both identification and detection taggants is omitted. If detection taggants are not required to be included, it may reasonably be assumed they will not present products liability problems. The last assumption made earlier, that Congress will not provide immu-

nities or other legislative adjustments of liabilities will be treated separately in the next section.

### What If the Designs of the Taggants Are Not Specifically Described by Regulation?

It will be recalled from an earlier discussion that two types of standards are available with which to describe the taggants that would be required to be included in explosives — design standards and performance standards. (See pp. 210-211, *supra*.) If performance standards were used in the relevant regulations, their major impact would be in connection with the issue of whether the manufacturers of explosives and taggants could argue against liability on the ground that the Government required taggants to be included in explosives. (See pp. 214-216, *supra*.) Performance standards would give the manufacturers greater control over the designs of the taggants to be included, and would weaken the nonliability argument. Of course, from the explosives manufacturers' viewpoint, control in this context may be illusory if only one taggant manufacturer's product meets the Government performance standards and it is not feasible for the individual explosives manufacturers to develop their own. At least from the taggant manufacturer's viewpoint, however, performance standards would give them even more control — and continuing control — compared to the situation that would be presented by design standards.

### What If Congress Includes Black and Smokeless Powders in the List of Explosives Required to Contain Taggants?

The major source of added difficulty in this circumstance is the fact that these powders, unlike most of the other explosives considered to this point, are "consumer products" in the normal sense of that term — i.e., consumers purchase and use these powders in small quantities in connection with a fairly broad range of sporting and recreational purposes. Generally speaking, courts have traditionally been more willing to impose liability on the makers and sellers of consumer products than on the makers of other types of products. Moreover, it may reasonably be assumed, at least for purposes of this analysis, that including taggants in loose-packed powders presents greater technical problems—e. g., physical separation of the taggants from the powders— than would be the case with solid-packed explosives such as dynamite. The combination of these two factors — a consumer product that poses greater technical prob-

lems — might very well increase the exposure to liability of both explosives and taggant manufacturers as a practical matter.

One major battleground, not particularly significant in connection with the sale of solid-packed, taggant-treated explosives to professional users (see pp. 216-217, *supra*) would be failure to warn. Persons (including nonuser bystanders) injured during the course of consumer use of taggant-treated powders would argue that they were not sufficiently warned of the risks accompanying such use, and a percentage of such cases could be expected to reach the jury. (On the subject of failure to warn see *generally* p. 207, *supra*.) Moreover, consumers would include in such actions claims based on product flaws (powder contained abnormally high, or low, concentration of taggants, or wrong size taggants — see *generally* pp. 206, 213, *supra*), and defective product designs (taggants are defectively designed component parts) (see *generally* pp. 206-207 and 211-213, *supra*), and a percentage of those claims could be expected to succeed.

### What If Congress Decides That Explosives Containing Taggants Pose "Socially Acceptable" Levels of Risk?

The change in the assumption here is that instead of determining that taggants pose no practical risks of accidental explosions — i.e., are "safe" for normal handling — Congress determines that the levels of risk presented by including taggants are not insignificant but are nevertheless socially acceptable—i.e., that some explosives will accidentally detonate, but that the antiterrorism benefits to society derived from including the taggants outweigh the costs of accidental explosions. With this hypothetical change in the assumption, the exposures to liability of explosives and taggants manufacturers (absent judicial recognition of the defense of governmental coercion and absent a special immunity provided by Congress—see the next section, *infra*) would almost certainly increase over what it would have been based on the former assumption. It will be recalled from an earlier discussion that even a finding by Congress that taggants are "safe" is unlikely to insulate manufacturers from liability as a practical matter. (See p. 216, *supra*.) By hypothesis, plaintiffs would be helped more if Congress were to concede in its findings the existence of a measurable, but acceptable, risk of accidental explosions. The question of whether courts would allow manufacturers to rely upon the social acceptability of the risks in arguing against liability was considered earlier, (see pp. 211-212, *supra*), and that analysis

will not be repeated. On the strength of the earlier analysis, it is unlikely that an explicit declaration by Congress that the benefits to society outweigh the risks of accidental explosions would change the courts' reactions to this aspect of the problem.

### What If Taggant Manufacturers Sell Their Products to the Federal Government, Which in Turn Sells Them to Explosives Manufacturers?

In an earlier discussion of the significance of the fact that explosives manufacturers are required to include taggants, it was recognized that in most of the cases in which manufacturers appear to have been exempted from liability on that basis, the Government actually purchased the products later alleged to be defective. (See p. 215, *supra*.) Superficially, at least, it would appear that both explosives and taggant manufacturers would be able to equate themselves more easily with the sellers in those cases were the Government to purchase the taggants and then resell them to explosives manufacturers.

One basis for questioning whether it would be that simple, however, is the other half of the earlier distinction between the precedents and the instant situation — i.e., the Government agencies in those cases originally purchased the products for their own use. It could plausibly be argued that there is a significant difference between the Government

purchasing specially designed products for its own use and later allowing the public to gain access to those products, on the one hand, and the Government acting merely as a conduit between private interests, on the other. To impose liability in the first situation arguably would burden unduly the ability of the Government to obtain at reasonable costs products specially suited to its operational — e.g., military— needs. To impose liability in the second situation would not have those consequences, assuming that the Government passed on its costs to the explosives manufacturers. Indeed, it can be argued that to refuse to impose liability merely because the Government acted as a sales conduit would be to exalt form over substance.

If the Government were to act as a sales conduit for the taggants, would the Government be exposed to products liability? The answer here would almost certainly be in the negative, given the availability of sovereign immunity. It has been held that strict products liability actions do not fall within the consent to suit provisions of the Federal Tort Claims Act. (See *In Re Bomb Disaster At Roseville, Cal.*, on April 28, 1973, 438 F. Supp. 769 (E. D. Cal. 1977).) And were a plaintiff to pursue a claim in negligence on the basis of inadequate testing or mistake in judgment in deciding to include taggants, the claim would almost certainly come within the preclusion of liability for the “exercise or performance or the failure to exercise or perform a discretionary function or duty” in 28 U. S.C. A.S 2680(a).

## ASSUMING THAT THE TAGGANTS REQUIREMENT WILL INCREASE THE PRODUCTS LIABILITY EXPOSURES OF THE EXPLOSIVES INDUSTRY, WHAT ADJUSTMENTS OF THOSE EXPOSURES MIGHT CONGRESS CONSIDER MAKING?

The purpose here is not to make recommendations regarding whether, or how, legislatively to adjust the exposures to liability of the parties affected by the proposed taggants requirement, but rather to explore the major alternatives available to Congress in this regard and to explore briefly the significant implications of each. In developing these alternatives in the sections that follow, the underlying assumption will be that Congress is chiefly concerned with the possible allocations of accidental explosions costs generated by the inclusion of normal concentrations of properly manufactured taggants in explosives, and is ready in any event to allocate the accident costs of abnormal

concentrations and improperly manufactured taggants —the costs of product “flaws” in the traditional sense of that term—to the manufacturers and sellers of taggants and explosives responsible for such abnormalities.

### Congress Could Decide to Shift the Accident Costs of “Normal Taggant Inclusion” to the Federal Government

The main policy argument in support of this alternative is that the costs of accidental explosions caused by the inclusion of normal concentrations

of properly manufactured taggants are costs directly attributable to the decision of Congress to require such inclusion in the interests of public safety, and therefore they should be borne by the Federal Government and spread generally to the public through the tax system. At least three basic variations of this alternative are available:

The Existing Tort System Remains Unchanged; When Manufacturers' Liability Is Based on "Normal Taggant Inclusion," They May Obtain Indemnity From the Government

Under this approach, manufacturers (and other commercial sellers) would be the defendants against whom the actions would initially be brought. In cases in which they are held liable in tort based upon the inclusion of normal concentrations of properly manufactured taggants, they would be indemnified, thus shifting the liability losses to the Federal Government. A number of questions may be raised concerning the efficacy of this approach, among which are the following: 1) manufacturers would still be open to the expense of defending these actions —would such expenses be reimbursed? 2) How would the basis of the defendant's liability be determined? Might Congress require a special verdict mechanism in all such cases — i.e., a specific finding by the trier of fact as to the role played by taggants in the explosion? 3) Would every case have to go to trial? What if settlements were reached? 4) Would such an approach create sufficient financial incentives favoring a finding of taggant involvement that manufacturers would manipulate the trial process to help assure such a result? 5) Would triers of fact, some of whom can be assumed to know of the indemnity plan, be tacitly encouraged to "blame the taggants" in cases involving accidental explosions?

One further issue that is inherent in indemnity actions which would have to be addressed is that of collateral estoppel. A decision in the action against the manufacturer that normal concentrations of properly manufactured taggants did not cause the explosion would preclude relitigation of that factual issue in an indemnity action against the Government. (See *Park Lane Hosiery Co., Inc. v. Shore* 439 U.S. 322, 58 L. Ed. 2d 552, 99 S. Ct. 645, (1979).) But a finding that a normal concentration of properly manufactured taggants caused the explosion would not necessarily bind the Government in an indemnity action. A sensible statutory procedure involving indemnity actions against the Government would almost certainly include consent by

the Government to be bound by the factual determinations in the actions against the manufacturers.

Immunity From Liability Is Granted to Members of the Explosives Industry for All Accidental Explosions; Plaintiffs Bring Actions Against Government; Government May Obtain Indemnity From Manufacturer If "Normal Taggant Inclusion" Is Not the Basis of Liability

This is the reverse of the variation considered in the preceding section, and resembles somewhat the approach to the liability question adopted recently in the National Swine Flu Immunization Program of 1976 (42 U. S.C.A. 8 247b(j) - (1) (1976).) In theory it reaches the same allocations of liability as the preceding variation, but the actions are brought in the first instance against the Government, not the explosives industry.

One significant difference between the circumstances surrounding the Swine Flu Program and the circumstances surrounding the inclusion of taggants in explosives relates to the relative significance of causal factors other than the Government-instigated activity. In connection with the Swine Flu Program, it could be assumed that a majority of the cases brought successfully by injured plaintiffs would not involve indemnity — i.e., that a majority of those persons injured were injured as a result of the inherent risks of the Program rather than the negligence of the manufacturers. With the taggants program, the situation may be quite the reverse. Here, it might be assumed that a relatively small percentage of accidental explosions are actually attributable to the normal inclusion of taggants. If that is the case, then the approach here being considered would, in contrast to the Swine Flu Program, in most cases send plaintiffs initially to the "wrong place" from which to seek relief.

Two results of this misdirection of focus, neither particularly desirable, might result: either taggants would typically be exonerated in the actions brought against the Government, in which case indemnity actions would become routine and the associated transaction costs a source of waste; or the triers of fact in the actions against the Government, sensing something of a "giveaway," would tend to blame the taggants in many more cases than could be supported on the data. In theory, of course, the latter circumstances would not arise. In practice, it could well be a real possibility.

The problem of whether findings in actions against the Government would be binding in indemnity claims against manufacturers would have

to be resolved differently from the way it could be resolved when suits are brought initially against manufacturers. Under the variation discussed here, the Government could not consent on behalf of the manufacturers that they be bound. But a statutory provision calling for making the appropriate members of the explosives industry parties to the actions could be worked out.

#### Limited Immunity From Liability Is Granted to Members of the Explosives Industry for Accidental Explosions Caused by Normal Taggants Inclusion; Government Is Liable for Explosions Caused by Normal Taggant Inclusion

This variation is a combination of the two preceding, and could be accomplished by either of two procedures. One method would be for plaintiffs to bring "normal" taggant cases against the Government and all others against the appropriate members of the explosives industry. One drawback to this is the inefficiency connected with bringing two separate actions, if it turns out that the plaintiff sued the wrong defendant first. A further problem is that once the indemnity idea is abandoned, a theory which would make the findings in the first trial binding on the defendant in the second would be more difficult to work out.

The second method would be for the plaintiff to sue both the Government and the appropriate industry members in a single suit. This would have the advantages of bringing all the parties together in a single proceeding. But if the action were brought in Federal court, accommodations would have to be made with the existing rules of diversity jurisdiction and jurisdictional amount. For the action to be brought in State court, Congress would have to consent to such suits.

#### Congress Could Decide to Shift the Accident Costs of "Normal Taggant Inclusion" to Explosives Users

The main policy argument in support of this alternative is that the actual risks posed by normal inclusions of taggants in explosives may be significantly smaller than the practical increases in manufacturers' exposures to liability resulting therefrom, causing an unfair shifting to manufacturers of accident costs that have been traditionally, and arguably should continue to be, borne by the users of

explosives. Under this alternative, when commercial users or their employees are injured because of normal taggant inclusion, the losses would remain where they fall due to the accident. When innocent bystanders are thus injured, the users would presumably be strictly liable in tort. (See p. 210, *supra*.) Admittedly, explosives users are not to blame for the very few accidental explosions that are in fact caused by normal taggant inclusion; but there is no practically feasible way to allow them to seek recovery for those accidents without unfairly shifting much greater accident costs, unrelated to taggant inclusion, to explosives manufacturers. (Obviously, the greater Congress's confidence in the safety of normal taggant inclusion, the more attractive this alternative becomes.)

The following variations on this theme deserve mention here.

#### The Existing Tort System Remains Unchanged Except That Congress Establishes a Presumption That Taggants Do Not Cause Accidental Explosions, Subject to Being Rebutted by Proof of Abnormal Taggant Concentrations or Improper Taggant Manufacture

Under this variation, plaintiffs would succeed in all of the cases in which they have traditionally succeeded under existing law, and would succeed in cases in which they can prove a "taggant flaw" in the literal sense of that term — i.e., cases in which they can prove that the concentration of taggants was too high (or low, if that were to cause the explosion), or that the taggants themselves were abnormal in some way. The major legal difficulty with this approach would be presented in the form of attacks by injured plaintiffs against such a provision on the ground that it constitutes an unconstitutional deprivation of rights in violation of due process of law. The recent Supreme Court decision in *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1 (1976), however, would seem to support the validity of such a presumption. The plaintiffs in that case were coal mine operators challenging on due process grounds the constitutionality of the Coal Mine Health and Safety Act. The Supreme Court upheld the Act's validity, including the establishment of an irrebuttable presumption that certain coal miners' lung diseases were work-related, concluding that due process requirements are satisfied in connection with liability-related presumptions if there is "a rational connection between the fact proved and the ultimate fact presumed." (428 U.S. at 4.)

Admittedly, the “rational connection” to which the court refers would become strained in the present context if Congress were not factually to conclude that normal taggant inclusion was “safe” for normal handling of explosives. But assuming that Congress views as remote the chances of normal concentrations of taggants causing explosions, a presumption of no causal connection should withstand judicial scrutiny. “When it comes to evidentiary rules in matters ‘not within specialized judicial competence or completely common place,’ “ the Court concluded in *Usery v. Turner Elkhorn Mining Co.*, [supra], “ it is primarily for Congress to amass the stuff of actual experience and cull conclusions from it. ” “ (428 U.S. at 33-34, quoting *United States v. Gainey*, 380 U.S. 63,67 (1965 ).)

### Congress Could Grant to Manufacturers Immunity From Tort Liability for Accidental Explosions Caused by Normal Taggant Inclusion

If the “rebuttable presumption” approach were believed to present constitutional problems of the sort considered in the preceding section, this variation might provide an alternative approach to accomplishing the same objective without reliance on presumptions. Thus, if Congress were ready to accept the policy argument advanced at the outset of this section, it might be more straightforward to speak in terms of an immunity granted on the basis of a policy judgment rather than a presumption based on a factual judgment. Of course, plaintiffs could be expected to attack this alternative on the ground that it denies to them the constitutionally guaranteed right to equal protection of the laws. An attack of this sort was recently brought in Federal court against a somewhat similar provision in the Federal law limiting the liability of nuclear plant operators.

In *Duke Power Co. v. Carolina Environmental Study Group*, 438 U.S. 59 (1978), the Federal no-fault compensation scheme created for the benefit of victims of nuclear accidents resulting from the operation of federally licensed nuclear power generation facilities was challenged on due process and equal protection grounds. The district court held the statutory ceiling of \$560 million on liability from one accident to be, inter alia, violative of the equal protection requirement because the statute “place(d) the cost (of the encouragement of nuclear power) on an arbitrarily chosen segment of society, those injured by nuclear catastrophe.” 431 F. Supp. 203 (W. D.N.C. 1977). The U.S. Supreme

Court reversed, holding the ceiling on liability to be “classic example of an economic regulation.” (438 U.S. at 83.) The Act was rational, according to the Court, in view of Congress’s purpose of encouraging private development of nuclear energy, and this was “ample justification for the difference in treatment between those injured in nuclear accidents and those whose injuries are derived from other causes.” (438 U.S. at 93-94.) Although the facts are somewhat different, (a limited remedy was available to injured plaintiffs under applicable legislation), it can be argued that the Duke Power decision supports extending the immunity described herein.

### Congress Could Decide to Shift the Accident Costs of “Normal Taggant Inclusion” to Manufacturers of Taggants and Explosives

Congress could reach at least two conclusions that would support this alternative. First, Congress could assume that the costs of these taggant-related accidental explosions will be passed on by the manufacturers to their customers in the form of increases in prices and conclude that such a distribution of those costs is appropriate; and second, Congress could assume that the manufacturers are in positions of control over the techniques of design and manufacture affecting the levels of risks presented by normal taggant inclusions, and conclude that imposing liability will pressure manufacturers to exercise their control in ways to accomplish reductions in those risks.

A starting place for accomplishing these objectives would be for Congress to grant no immunities, nor extend any rights of indemnity, to manufacturers of taggants and explosives. In addition, some or all of the following changes in existing law might be considered:

#### Nonviability Based on the Fact of the Government’s Involvement Could Be Eliminated Legislatively

It will be recalled that in cases involving taggants, manufacturers may have available to them arguments that they should not be liable due to the fact that taggants are required by law to be included in explosives. (See pp. 214-216, *supra*.) If Congress concludes that these accident costs should be borne by the manufacturers, the possibility of such a defense could be eliminated legislatively.

### Manufacturers' Liability for Accidental Explosions Caused by Taggants Could Be Established Legislatively

It will be recalled from an earlier discussion that some courts, at least, could be expected to hold the manufacturers liable in cases where the plaintiff succeeds in proving that the taggants caused an accidental explosion. (See pp. 211-213, *supra*.) However, to clear up any doubt on the question, Congress might consider making it clear in the statute.

### A Presumption That Accidental Explosions Are Caused by Taggants Could Be Established, Subject to Being Rebutted by Proof of User Mishandling

This would be a drastic change in existing law which, in combination with the preceding two, would practically assure that every plaintiff injured in an accidental explosion would reach the trier of fact regardless of the actual cause of the explosion. The practical effect of this change in existing law would be to make manufacturers almost insurers of the safety of those using and affected by explosives. (For a brief description of the basis for constitutional challenge of this change by the manufacturers, see pp. 222-223, *supra*.)

### The Question of Indemnity and Contribution Between Taggant Manufacturers and Explosives Manufacturers Could Be Addressed Legislatively

Especially if the alternative of shifting the costs of manufacturers were adopted, Congress should

consider the possibility of establishing specific rules governing questions of indemnity and contribution between these manufacturing groups. (Cf. pp. 211-213 and 217, *supra*.) On the basis of "who profits?" and "who controls?" the activity in question, taggant manufacturers might be required to indemnify explosives manufacturers.

### Congress Could Decide to Divide the Costs Among the Interested Parties, Apportioning Such Costs in a Variety of Ways

The possible variations under this alternative are numerous, and will not be explored in their variety. One possibility, however, deserves mention if for no other reason than the fact that it has become something of a favorite with State legislatures in addressing areas of tort liability, such as medical malpractice, perceived to be in various stages of "crisis." Congress could decide to place a dollar limit on claims arising out of accidental explosions found to have been caused by normal inclusions of taggants. Were this approach adopted it would, in effect, divide the costs of such accidents between manufacturers and users/victims.

## SUMMARY

### Exposure of the Explosives Industry to Products Liability Under Existing Law

Liability of manufacturers and other sellers of explosives. Basically the same rules of liability that apply to manufacturers and commercial sellers of other products apply to manufacturers and commercial sellers of explosives. Defendants are liable on the basis of negligence, breach of warranty, misrepresentation, and strict liability in tort. Two fact patterns predominate in actions against explosives manufacturers: those involving product flaws, and those involving failures to warn. In product flaw

cases, plaintiffs may rely on strict liability in most jurisdictions; in failure to warn cases, a basic negligence analysis is most often employed. Two factual characteristics unique to explosives cases account for the somewhat different judicial treatment afforded these cases compared with products liability cases generally. First, explosives invariably "self destruct" during use, forcing plaintiffs to rely to an unusual extent upon circumstantial evidence of product flaws. And second, explosives are not "consumer products" in the usual sense of that term—the typical purchasers and users of explosives are presumably experienced professionals. This second characteristic tends to affect negative-

ly not only the plaintiff's opportunity circumstantially to prove the existence of a product flaw, but also the likelihood of his succeeding with an argument that the defendant failed adequately to warn of hidden dangers.

**Liability of manufacturers and other sellers of explosives components.** "Components" in the present context is synonymous with "ingredients." Manufacturers and other commercial sellers of explosives components are theoretically liable (and in most States, strictly liable) for flaws in their products, but practical problems of proof tend to preclude such liability in most cases. Although sellers of components in other product areas have been held liable both for defective designs and failure to warn, the factual bases of such liability—reliance by others on the component seller's unique knowledge and judgment regarding the risks associated with uses of its product—are not typically present in situations in which basic, general-purpose chemical compounds are sold in bulk to explosives manufacturers.

**Liability of manufacturers and other commercial sellers of explosives accessories.** "Accessories" refers to products normally used in connection with explosives, including blasting caps and fuses. When the injured plaintiff can prove that he was injured in an accidental explosion due to a flawed accessory, most jurisdictions will hold the commercial sellers of that accessory strictly liable. However, as a practical matter, proof of physical defect is difficult, especially with respect to blasting caps. A number of actions have been brought on the basis of the defendant's failure to warn. When fuse manufacturers fail adequately to warn of the burning characteristics of their products, they are held liable to users injured by that failure. Judicial reactions to arguments that blasting cap manufacturers should warn children and other incompetent users that their products are explosive have been mixed. One court not only recognized such a duty, but suggested that the entire blasting cap industry, together with their trade association, could be joined as defendants in a single action.

**Liability of commercial transporters and handlers of explosives.** Commercial transporters, handlers, and users of explosives are subject to strict liability for harm to persons or property caused by accidental explosions.

## How Would These Exposures to Liability Change If Congress Required the Inclusion of Taggants in Explosives?

**Changes in explosives manufacturers' and sellers' exposures to liability.** Technically, normal concentrations of taggants pose questions of product design rather than product flaws. However, taggants that cause accidental explosions are functionally quite flawlike, and some courts can be expected to treat them like flaws. Thus, unless the defendants are permitted to rely on arguments of governmental coercion (a question to be addressed shortly), their exposure to liability will be increased to the extent that plaintiffs can prove that taggants caused accidental explosions. Expert testimony supporting such a causal relationship could take two basic forms: 1) testimony that a normal concentration of taggants caused the explosion, and 2) testimony that an abnormal concentration of taggants caused the explosion. It is likely that plaintiffs will, in appropriate cases, find experts willing to offer both types of testimony.

It is difficult to predict the legal significance courts will attach to the fact that defendant manufacturers are required to include taggants in explosives. A strong argument can be made, supported by precedent, that this element of governmental coercion should constitute a defense. However, the situation surrounding the inclusion of taggants may be sufficiently different from the situations in prior cases to allow courts to impose liability. In any event, because the taggants requirement is imposed by Federal law, courts will be faced with the question of whether State laws governing tort liability have been preempted.

**The exposure to liability of taggant manufacturers.** If the plaintiff can prove that a particular batch of taggants was flawed, causing an accidental explosion, the taggant manufacturer will probably be liable. Whether taggant manufacturers will be liable for explosions caused by "normal" taggants depends on whether courts view taggants as components specially designed for inclusion in explosives exclusively, or whether courts view taggants as general-purpose products suitable for a range of different applications not all of which are neces-

sarily dangerous. On balance, the former approach seems more plausible, and therefore taggant manufacturers may be exposed to liability to injured victims of taggant-caused accidental explosions. Although courts are unlikely to give effect to disclaimers vis-a-vis injured plaintiffs, the question of whether they will give effect to disclaimers vis-a-vis explosives manufacturers is more in doubt.

Whether courts will allow taggants manufacturers to depend on the basis that taggants are required by Federal law to be included in explosives is not clear. It can be argued persuasively that taggant manufacturers should not be allowed such a defense even if courts were to make that defense available to explosives manufacturers.

### What Adjustments to These Exposures to Liability Might Congress Consider Making?

Congress could decide to shift the accident costs of "normal taggant inclusion" to the Federal Government. Three approaches to this end might be considered: 1) allow defendant companies held liable in tort actions because of the inclusion of normal concentrations of taggants to seek indemnity from the Government; 2) grant to the companies immunity from tort liability for all allegedly defective explosives, allow all actions based on allegedly defective explosives to be brought against the Government, and then allow the Government to seek indemnity from the companies when "normal taggant inclusion" is not the basis of the Government's liability; or 3) grant immunity to the com-

panies limited to liability for accidents caused by "normal taggant inclusion," and allow those cases to be brought against the Government.

Congress could decide to shift the accident costs of "normal taggant inclusion" to explosives users. Two approaches to accomplish this end might be considered: 1) Congress could create a presumption that taggants do not cause accidental explosives, subject to being rebutted by proof of abnormal taggant concentrations or improper taggant manufacture; or 2) Congress could grant to manufacturers and sellers immunity for accidental explosions caused by normal taggant inclusion.

Congress could decide to shift the accident costs of "normal taggant inclusion" to manufacturers of taggants and explosives. A range of alternatives are available to accomplish this end, among them: 1) nonliability based on the fact of Government coercion could be eliminated legislatively; 2) manufacturers' liability for accidental explosions caused by taggants could be established legislatively; 3) a presumption that accidental explosions are caused by taggants could be established legislatively, subject to being rebutted by proof of user mishandling; and 4) the question of indemnity and contribution between taggant manufacturers and explosives manufacturers could be addressed legislatively.

Congress could divide the costs among the interested parties. This objective could be accomplished by placing a dollar limit on claims arising out of accidental explosions found to have been caused by normal taggants inclusion, effecting a division of accident costs between manufacturers and users/victims.