

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued January 10, 2006

Decided February 10, 2006

No. 04-5453

TRIPOLI ROCKETRY ASSOCIATION, INC. AND
NATIONAL ASSOCIATION OF ROCKETRY,
APPELLANTS

v.

BUREAU OF ALCOHOL, TOBACCO, FIREARMS, AND
EXPLOSIVES,
APPELLEE

Appeal from the United States District Court
for the District of Columbia
(No. 00cv00273)

Joseph R. Egan argued the cause for appellants. With him on the briefs were *Martin G. Malsch*, *Robert J. Cynkar*, and *Charles J. Fitzpatrick*.

Jane M. Lyons, Assistant U.S. Attorney, argued the cause for appellee. With her on the brief were *Kenneth L. Wainstein*, U.S. Attorney, and *Michael J. Ryan*, Assistant U.S. Attorney. *R. Craig Lawrence*, Assistant U.S. Attorney, entered an appearance.

Before: TATEL and GARLAND, *Circuit Judges*, and EDWARDS, *Senior Circuit Judge*.

Opinion for the Court filed by *Senior Circuit Judge* EDWARDS.

EDWARDS, *Senior Circuit Judge*: Appellants Tripoli Rocketry Association and National Association of Rocketry are non-profit organizations whose members are hobby rocket enthusiasts. They challenge the Bureau of Alcohol, Tobacco, Firearms & Explosives' ("ATFE") refusal to alter its classification of ammonium perchlorate composite propellant ("APCP") as an "explosive" for purposes of 18 U.S.C. § 841(d) (2000). (ATFE is currently charged with administering the statute at issue. Until recently, those duties rested with the Bureau of Alcohol, Tobacco & Firearms ("ATF"), and, before that, with the Internal Revenue Service. For the sake of simplicity, we will refer only to "ATFE," except when quoting material that refers to one of its predecessors.)

APCP is commonly used as fuel in hobby rockets, and classification as an explosive imposes regulatory controls on the handling of APCP by appellants' members. The statutory definition of "explosive" encompasses materials whose "primary or common purpose" is to "function by explosion." ATFE determines whether a material fits this definition by characterizing the speed at which the material burns: materials with the fastest burn rates *detonate*, the slowest ones *burn*, and substances in between *deflagrate*. In other words, under ATFE's characterization, a substance that deflagrates burns more rapidly than something that simply burns (like paper or a candle wick), but less rapidly than something that detonates (like dynamite). And ATFE treats a material as explosive if it functions by detonation or deflagration.

Appellants challenge ATFE's determination that APCP deflagrates. Appellants contend that ATFE's determination was

arbitrary and capricious under the Administrative Procedure Act (“APA”), 5 U.S.C. § 706(2)(A) (2000), because there is no evidence in the record supporting the conclusion that APCP functions by deflagration and there is some evidence in the record suggesting a contrary conclusion. In response, ATFE points to evidence relating to the properties of “rocket propellants.” ATFE also argues that, in a case of this nature – involving the agency’s expertise in deciding a highly technical question – the court should defer to ATFE’s judgment.

This court routinely defers to administrative agencies on matters relating to their areas of technical expertise. We do not, however, simply accept whatever conclusion an agency proffers merely because the conclusion reflects the agency’s judgment. In order to survive judicial review in a case arising under § 7006(2)(A), an agency action must be supported by “reasoned decisionmaking.” *Allentown Mack Sales & Serv., Inc. v. NLRB*, 522 U.S. 359, 374 (1998) (quoting *Motor Vehicle Mfrs. Ass’n of the United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 52 (1983)). “Not only must an agency’s decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational. Courts enforce this principle with regularity when they set aside agency regulations which, though well within the agencies’ scope of authority, are not supported by the reasons that the agencies adduce.” *Id.* The problem in this case is that ATFE’s explanation for its determination that APCP deflagrates lacks any coherence. We therefore owe no deference to ATFE’s purported expertise because we cannot discern it. ATFE has neither laid out a concrete standard for classifying materials along the burn-deflagrate-detonate continuum, nor offered data specific to the burn speed of APCP when used for its “common or primary purpose.” On this record, the agency’s decision cannot withstand judicial review. We therefore remand the case for further consideration.

I. BACKGROUND

Title XI of the Organized Crime Control Act of 1970 (“OCCA”) regulates the manufacture, distribution, and storage of explosive materials. *See* Pub. L. No. 91-452, § 1102, 84 Stat. 952 (1970) (codified at 18 U.S.C. §§ 841-848 (2000)). Under the statute, “explosive materials” include “explosives, blasting agents, and detonators,” 18 U.S.C. § 841(c); and, for purposes of the provisions at issue here, “explosives” include:

any chemical compound mixture, or device, the primary or common purpose of which is to function by explosion; the term includes, but is not limited to, dynamite and other high explosives, black powder, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, and igniters.

18 U.S.C. § 841(d).

Until recently, the statute required the Secretary of the Treasury or his delegate to compile an explosives list, 18 U.S.C. § 841(d), (k) (2000), but this responsibility was reassigned by the Homeland Security Act, Pub. L. No. 107-296 § 1112(e), 116 Stat. 2135, 2276 (2002). The current version of OCCA requires the Attorney General to “publish and revise at least annually in the Federal Register” the explosives list, including “any additional explosives which he determines to be within the coverage of this chapter.” 18 U.S.C. § 841(d) (Supp. 2002). Potential users must obtain a license or permit from ATFE to import, manufacture, or deal in explosive materials. 18 U.S.C. § 842(a); *see also* 18 U.S.C. § 843 (2000) (outlining requirements for obtaining licenses). Users are also subject to certain requirements governing the manufacture, storage, transportation, transfer, and sale of explosive materials. 18 U.S.C. § 842(b)-(k). Violators of these statutory provisions face the possibility of criminal sanctions. 18 U.S.C. § 844(a)(1), (b) (2000).

It has always been the case that the agency regulations implementing these OCCA requirements have exempted, *inter alia*, “propellant actuated devices . . . manufactured, imported, or distributed for their intended purposes.” *See* 27 C.F.R. § 555.141(a)(8) (2005) (current exemption); 26 C.F.R. § 181.141(i) (1972) (initial exemption). “Propellant actuated device” is defined to mean: “Any tool or special mechanized device or gas generator system which is actuated by a propellant or which releases and directs work through a propellant charge.” 27 C.F.R. § 555.11 (2005).

Appellants claim that there is no known purpose for using APCP other than as a rocket propellant. According to appellants, hobby rocket enthusiasts use APCP in one of two fashions. The material is sometimes shipped already in a rocket motor and then used once in a model rocket. Alternatively, the material is shipped as part of a reloadable motor kit in the form of propellant modules, from which the rocket enthusiast assembles the motor. Upon ignition, APCP in rocket motors is designed to release its energy in a controlled, predictable, and focused fashion to power the flight of the hobby rocket.

APCP was placed on the first “Explosives List” issued in 1971, *see* Commerce in Explosives, 36 Fed. Reg. 658, 675 (Jan. 15, 1971), and has remained on the list ever since, *see* Commerce in Explosives; List of Explosive Materials, 70 Fed. Reg. 73,483, 73,484 (Dec. 12, 2005). In April 1994, ATFE sent a letter to Aerotech, Inc., a company that produces hobby rockets, replying to the company’s inquiries regarding the regulatory constraints affecting its business. ATFE explained that “[d]uring the early 1970’s when [ATFE] was assigned the responsibility of enforcing the Federal explosives laws, it was clear that [the agency] did not intend to regulate toy model rockets which did not constitute a public safety hazard,” but that “[i]t is also clear that ammonium perchlorate composite propellants are explosives since they have been on the

explosives list since the first list was published in 1971.” Letter from ATFE to Gary C. Rosenfield, President, Aerotech, Inc. (Apr. 20, 1994) at 1, Joint Appendix (“J.A.”) 106. The agency declared that the exemption for propellant actuated devices applies only to rocket motors that, *inter alia*, contain no more than 62.5 grams of propellant, thus excluding APCP from exemption. *Id.* ATFE also announced that, while fully assembled rocket motors could qualify for the exemption, rocket propellant prior to assembly cannot.

Appellants challenged this decision in a September 7, 1999 letter to ATFE, asserting that APCP does not function by explosion and, therefore, ATFE lacked statutory authority to regulate the material as an explosive. Appellants also argued that any type of rocket motor, regardless of the amount of fuel, is a propellant actuated device and therefore exempt from regulation. Finally, appellants criticized what they considered procedural defects in the promulgation of the explosives list, arguing that ATFE had never enunciated any “criteria (specific or general) for determining why the listed materials were ‘explosives,’ ‘detonators,’ or ‘blasting agents’” and that the “absence of any criteria by which to make a determination that APCP should be on the list . . . renders the explosives list both over-inclusive and under-inclusive.” Letter From Appellants’ Counsel to ATFE (Sept. 7, 1999) at 12-13, J.A. 99-100.

In response, ATFE sent appellants a letter denying their request that APCP be removed from the explosives list. In this letter, ATFE declared that, because it functions by deflagration, APCP is an explosive:

An item can “function by explosion” not only by detonating, but also by deflagrating. While APCP does not generally function by detonation, it most definitely functions by deflagration; therefore, APCP is properly deemed by ATF to “function by explosion” and is properly classified as an “explosive.”

Letter from ATFE to Appellants' Counsel (Dec. 22, 2000) at 2 ("December 2000 Letter"), J.A. 73. The agency first noted that some of the substances specifically itemized as explosives in § 841(d) burn too slowly to be characterized as detonating, thus providing "a clear manifestation of Congress's intention that both detonating *and* deflagrating 'compounds, mixtures, and devices' are to be considered" explosives. *Id.* at 4, J.A. 75. The agency further stated that treating deflagrating materials as explosives places the statutory definition in line with the scientific definition, which ATFE recapitulated as follows:

While deflagration produces a reaction that is slower than the reaction achieved through detonation, the deflagration reaction is *much faster* than the reaction achieved by what is more commonly associated with burning (such as with the burning of a candle or with the burning that occurs in a typical building- or forest-fire).

Id. (emphasis added). The agency never defined the threshold for "much faster," but it did cite a pyrotechnics text to further articulate the relative measurements that distinguish various forms of combustion:

Dr. Conkling indicates that the approximate reaction velocity associated with detonation (he cites as examples dynamite and TNT) is greater than one kilometer per second; he indicates that the approximate reaction velocity associated with deflagration (he cites as examples rocket propellants, and confined black powder) is in the range of "meters per second" [typically, the speed of deflagration will be less than 326 meters per second – the velocity of sound]; and he indicates that the approximate reaction velocity associated with the more-common [sic] type of burning is in the order of "millimeters per second."

Id. at 5 n.5, J.A. 76 (first alteration in original) (quoting JOHN A. CONKLING, CHEMISTRY OF PYROTECHNICS 2 (1985)).

ATFE's letter concludes that "[u]pon ignition . . . APCP deflagrates," because it "burns with oxidation taking place at a rate slower than the oxidation rate in a detonation (though at a rate much faster than is associated with typical burning)." *Id.* at 5, J.A. 76. To bolster this determination, the agency quoted the National Fire Protection Association's definition of "propellant" as "an explosive material which normally functions by deflagration," and claimed that other expert organizations adhere to similar definitions. *Id.* at 6-7, J.A. 76-77 (quoting NATIONAL FIRE PROTECTION ASSOCIATION, FIRE PROTECTION HANDBOOK 5-69 (16th ed. 1986)). After finding that APCP deflagrates, ATFE rejected appellants' argument that rocket motors are propellant actuated devices and thus exempt from regulation.

Appellants brought suit against ATFE in the United States District Court for the District of Columbia, challenging the agency decisions rendered in the December 2000 Letter. Appellants contended that § 841(d)'s definition does not extend to deflagrating materials and that, in any event, APCP does not function by deflagration. Appellants also objected to the agency's decision to deny sport rocket motors an exemption as propellant actuated devices. And they contested ATFE's decision to establish thresholds for the regulation of certain APCP rocket motors based upon their weight, design, and intended use without first affording the public an opportunity to comment on those thresholds.

On March 19, 2004, the District Court issued an opinion addressing the parties' cross motions for summary judgment. *Tripoli Rocketry Ass'n, Inc. v. Bureau of Alcohol, Tobacco, Firearms & Explosives*, 337 F. Supp. 2d 1 (D.D.C. 2004). The District Court noted that "a court should review scientific judgments of an agency 'not as the chemist, biologist or statistician that we are qualified neither by training nor experience to be, but as a reviewing court exercising our narrowly defined duty of holding agencies to certain minimal

standards of rationality.” *Id.* at 8 (quoting *Ethyl Corp. v. EPA*, 541 F.2d 1, 36 (D.C. Cir. 1976) (en banc)). After reviewing the statute and the record, the District Court “conclude[d] that the ATF’s decision that APCP is a deflagrating explosive is permissible.” *Id.* at 9. The District Court then granted summary judgment to the agency on the issue of whether APCP is a deflagrating explosive. However, the trial court invalidated ATFE’s decision that sport rocket motors are not propellant actuated devices, because it was rendered without notice-and-comment rulemaking as required by the APA and OCCA. *Id.* at 13. The court also noted that the agency had commenced rulemaking on the disputed non-exempt status of sport rocket motors that use more than 62.5 grams of APCP. *Id.* at 14-15. The District Court delayed issuing any final judgment on these two matters pending the agency’s completion of the notice-and-comment rulemakings.

On October 21, 2004, appellants filed a motion requesting the District Court to enter a final judgment, pursuant to Federal Rule of Civil Procedure 54(b), on the issue of whether APCP is properly classified as an explosive. The District Court concluded that there was no just reason for delaying a final judgment and granted appellants’ motion. *See Tripoli Rocketry Ass’n, Inc. v. Bureau of Alcohol, Tobacco, Firearms & Explosives*, CA No. 00-273 (D.D.C. Dec. 21, 2004). Appellants then filed a timely appeal.

II. ANALYSIS

This court reviews the District Court’s grant of summary judgment *de novo*. *Egan v. U.S. Agency for Int’l Dev.*, 381 F.3d 1, 3 (D.C. Cir. 2004). Appellants raise one issue in this appeal: whether the administrative record supports ATFE’s decision to characterize APCP as a deflagrating material, and thus an explosive under § 841(d). Appellants do not challenge the District Court’s decision that deflagrating materials are properly defined as explosives under the statute. *See* Appellants’ Br. at

17 (“[F]or purposes of this appeal it is assumed that a substance whose primary or common purpose is to function by deflagration is an ‘explosive.’”). The simple question before this court is whether ATFE’s determination that APCP functions by deflagration is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,” 5 U.S.C. § 706(2)(A).

ATFE’s decision cannot be sustained on the basis of the current administrative record. The agency has never provided a clear and coherent explanation for its classification of APCP. We do not mean to suggest that the record mandates a conclusion contrary to the agency’s. Rather, we simply find that ATFE has never articulated the standards that guided its analysis. “To survive review under the ‘arbitrary and capricious’ standard, an agency must ‘examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.’” *PPL Wallingford Energy LLC v. FERC*, 419 F.3d 1194, 1198 (D.C. Cir. 2005) (quoting *State Farm*, 463 U.S. at 43 (internal quotation marks omitted)). ATFE has not met this standard.

The fatal shortcoming of ATFE’s position is that it never reveals how it determines that a material deflagrates. Scientific sources reproduced in the record suggest that the defining characteristic is burn velocity, but the agency never defines a range of velocities within which materials will be considered to deflagrate. We understand that it may be necessary for AFTE to define a range flexibly, accounting for gray areas where expert discretion is necessary to characterize a particular substance. But, as a reviewing court, we require *some* metric for classifying materials not specifically enumerated in the statute, especially when, as here, the agency has not claimed that it is impossible to be more precise in revealing the basis upon which it has made a scientific determination. Yet, in this case, ATFE

has provided virtually nothing to allow the court to determine whether its judgment reflects reasoned decisionmaking.

AFTE's unbounded relational definition – *i.e.*, “the deflagration reaction is *much faster* than the reaction achieved by what is more commonly associated with burning” – does not suffice, because it says nothing about what kind of differential makes one burn velocity “much faster” than another. Ten millimeters per second? A hundred? A thousand? The record certainly suggests that expansive differentials are possible, even among compounds containing APCP. One source in the administrative record describes compounds containing APCP with burn rates ranging from 3.81 to 101.6 millimeters per second, *see* 8 SEYMOUR M. KAYE, ENCYCLOPEDIA OF EXPLOSIVES AND RELATED ITEMS 416, 433 (1978), and there is no reason to assume that the range illustrated in the record is even exhaustive.

Appellants focus on the range of burn speeds illustrated in the *Encyclopedia of Explosives*, arguing that “the administrative record relied on by BATFE establishes without contradiction that the highest burn rate for APCP rocket motors (101.6 millimeters per second) is a *factor of ten* below BATFE's own burn rate threshold for deflagration (1000 millimeters (or one meter) per second).” Appellants' Br. at 18-19. The agency's brief says virtually nothing in response to this. *See* ATFE's Br. at 13 (“Crucially, ATF did not draw the same conclusion as appellants from the information there.”). Moreover, the burn rates that ATFE attributes to detonation support appellants' contention that detonation occurs at a speed representing a different order of magnitude than the speeds reflected in the *Encyclopedia of Explosives*.

In its December 2000 Letter, ATFE suggests that the upper bound of burn velocity for a deflagrating material is 326 meters per second – the speed of sound. *See* J.A. 76-77. In the same letter, the agency also indicates “the approximate reaction

velocity associated with detonation . . . is greater than one kilometer per second.” *Id.* at 5 n.5, J.A. 76. What is one to make of this? Obviously, there is such a wide potential for disparity among the substances potentially classified as explosives that the vague description “much faster” conveys no information at all.

ATFE’s relational definition suffers from a further methodological flaw: it designates no points of comparison. In order to say that one item burns “much faster” than another, one would need to know the speed at which each item burns. But ATFE has never pointed to evidence establishing the data points necessary to make a comparison. For one thing, ATFE has not stated the burn velocity of APCP in the form relevant to this regulation. The sections of the *Encyclopedia of Explosives* reproduced in the record include tables displaying the burn speeds of several compounds containing APCP in varying proportions. See *ENCYCLOPEDIA OF EXPLOSIVES AND RELATED ITEMS*, *supra*, 412-16, 433-36, J.A. 199-203, 220-23. Whether the compositions listed in those tables approximate the features of APCP when used for its “primary or common purpose” is entirely unclear. Similarly, whether the conditions under which these compositions were observed match those under which APCP commonly functions is not ascertainable. Even if the agency had provided representative measurements for APCP, it would still need to identify the speed at which normal burning occurs, which it has not done.

In defense of its unbounded comparative analysis, ATFE insists that it had no burden to make more particularized findings. The agency concedes that it “certainly could have conducted experiments or otherwise researched burn rates specific to APCP used in model rocket motors to bolster its conclusion that APCP is capable of deflagration,” but claims that “nothing in the OCCA or the APA required it to do so.” ATFE’s Br. at 15. Unsurprisingly, then, rather than resting on

concrete evidence to support its judgment, ATFE simply points to evidence relating to the properties of “rocket propellants” and claims deference on the basis of its presumed technical expertise and experience. The purported evidence cited by the agency does not support its determination in this case, and the cry for deference is hollow.

ATFE makes three arguments, none of which are persuasive. First, ATFE points to fire safety texts describing “propellants” as deflagrating. *See* December 2000 Letter at 6-7, J.A. 77-78. ATFE appears to assume, as a matter of simple syllogism, that if some propellants deflagrate, and APCP is a propellant, then APCP deflagrates. It is quite obvious that this argument lacks a critical premise: nothing in the record shows that *all* propellants burn at comparable rates. It may be that “rocket propellant” is such a precise technical term that, once a feature is attributed to it generally, the feature inheres in every specific instance where the term applies. But nothing in this record supports that conclusion. Generic statements about “rocket propellants,” then, are not informative.

Second, the agency seeks to invoke its institutional expertise as a licence for making unarticulated findings. It accuses appellants of “quarrel[ling] only over a matter of degree,” and asserts that determining the burn speeds definitive of deflagration “requires a level of scientific expertise and judgment that Congress has appropriately delegated to ATF and which is particularly poorly suited for the judiciary to second-guess.” ATFE’s Br. at 12. As noted above, ATFE has overstated the degree of deference owed to it by the courts in a case arising under the APA challenging an agency action as arbitrary and capricious. Faced with a reasoned judgment about what conclusions to draw from technical evidence or how to adjudicate between rival scientific theories, we will not override an agency’s discretion. “Particularly when we consider a purely factual question within the area of competence of an

administrative agency created by Congress, and when resolution of that question depends on ‘engineering and scientific’ considerations, we recognize the relevant agency’s technical expertise and experience, and defer to its analysis unless it is without substantial basis in fact.” *Fed. Power Comm’n v. Fla. Power & Light Co.*, 404 U.S. 453, 463 (1972). But where an agency has articulated no reasoned basis for its decision – where its action is founded on unsupported assertions or unstated inferences – we will not “abdicate the judicial duty carefully to ‘review the record to ascertain that the agency has made a reasoned decision based on reasonable extrapolations from some reliable evidence.’” *Am. Mining Cong. v. EPA*, 907 F.2d 1179, 1187 (D.C. Cir. 1990) (quoting *Natural Res. Def. Council v. EPA*, 902 F.2d 962, 968 (D.C. Cir. 1990) (internal quotation marks omitted)). Because ATFE has articulated no “satisfactory explanation for its action including a rational connection between the facts found and the choice made,” *id.* (quoting *State Farm*, 463 U.S. at 43 (internal quotation marks omitted)), it is owed no deference for the action taken in this case on this record.

Finally, ATFE directs our attention to the affidavit of John A. Conkling, the author of the pyrotechnics text quoted in the December 2000 Letter. In his affidavit, Conkling states that he “consider[s] APCP to be a deflagrating material because it is capable of rapid burning and can accelerate to deflagration under pressure or confinement.” Conkling Aff. ¶ 11, J.A. 57. For obvious reasons, this affidavit in no way aids the agency’s cause in this case. For one thing, the affidavit was not taken until after litigation in this case commenced. It is therefore not a part of the agency record under review. It is well understood in administrative law that the “focal point for judicial review should be the administrative record already in existence, not some new record completed initially in the reviewing court.” *Env’tl. Defense Fund, Inc. v. Costle*, 657 F.2d 275, 284 (D.C. Cir. 1981). The chief exception to this rule – situations “where

‘there was such a failure to explain administrative action as to frustrate effective judicial review’” – does not apply here, because any “new materials should be merely explanatory of the original record and should contain no new rationalizations.” *Id.* at 285 (quoting *Camp v. Pitts*, 411 U.S. 138, 142-43 (1973)). Moreover, even if we were inclined to credit the affidavit, it proves nothing of consequence in this case. Conkling merely offers a conclusory assertion that APCP deflagrates. But this view in no way remedies ATFE’s problem in this case, namely, the agency’s complete absence of standards for determining when a particular material deflagrates.

III. CONCLUSION

ATFE’s authority to designate deflagrating materials as explosives under § 841(d) is undisputed by appellants. But for the agency to so designate a *particular material*, APCP, it must establish that it is indeed a deflagrating substance. In this case, the agency has articulated no standard whatsoever for determining when a material deflagrates. We therefore remand the case so that ATFE may reconsider the matter and offer a coherent explanation for whatever conclusion it ultimately reaches. Because ATFE’s designation of APCP as an explosive was in place long before the present challenge, we will not vacate the designation without first affording the agency an opportunity to reconsider this matter. The case is hereby remanded to the District Court with instructions to remand the case to the agency for further consideration consistent with this decision.