

before being cleared by the Defense Secretary.(68) There was no such requirement (the review of individual contracts by the Secretary of Defense) for orders placed with private contractors.

Timing was everything to an organization so dependent upon transferred funds. Robert Huntoon, then chief of the Bureau's Missile Development Lab at Corona, California, remembers telephoning Washington every morning during this period, to find out if funds were available for that day's operations.(69) The Kelly Committee requested the Kyes Order be suspended at least until they had finished their investigation.

The true motives of Weeks and Wilson were even more suspect when columnist Drew Pearson reported that on March 2, little more than a month after Weeks was sworn in, Moorehead Patterson, president of American Machine and Foundry Co., visited NBS. Patterson, allegedly a close friend of Weeks, told scientists at the Bureau that it was his understanding that the whole proximity fuse R&D program would soon be taken from NBS, and that his company was ready to move the whole operation to his Boston plant. He also made offers to several key scientists. Pearson pointed out, control of this sensitive and costly effort would have a

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68. The Washington Post, May 1, 1953.

69. Personal interview, op.cit.

profound pay-off in defense contracts. According to Pearson's account, the week following Patterson's visit to the Bureau saw Fred Powell, vice-president of American Machine and Foundry, in Washington visiting Defense and Commerce officials. He informed these officials that his company was positioned to absorb the entire fuse project "on a moment's notice." Shortly thereafter, on March 25, Weeks sent his infamous letter to Wilson.(70)

One commentator observed that Weeks himself was a potential beneficiary if the fuse program were given to A.M.&F. Two Boston-area companies in which Weeks had a substantial business interest were United Carr Fastener and Reed & Barton Corporation. In his pre-confirmation testimony to the Senate Interstate and Foreign Commerce Committee,

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70. "Politics Wins Feud with Science," by Drew Pearson in The Washington Post, May 1, 1953. Jacob Rabinow also mentions American Machine and Foundry in connection with the divestiture of the ordnance divisions, and recalls the following: "We heard before the [1952] election that if the Republicans won, the Bureau would be split and the three ordnance divisions would be given to private industry, specifically to American Machine and Foundry...We weren't happy about this. We liked the Bureau of Standards...We thought the story was probably true. It came to us from many sources." ("Jacob Rabinow recollections," op.cit. p. 14)

In a later column, Pearson also put the spotlight on Defense Secretary Charles Wilson. In a series of defense contract cutbacks affecting Ford, Chrysler, Studebaker and American Locomotive, Wilson's former company, General Motors, was left unscathed. The curious manipulation of bidding policy was all the more indicting in light of an earlier refusal by Wilson to sell off his General Motors stock, since he saw no conflict between the public interest and General Motors' interest. "GM Escapes Defense Cutbacks," (The Washington Post, Aug.17, 1953)

Weeks said that no more than \$25 worth of his business interests were associated with the Department of Commerce, while allowing that some business was done with the Department of Defense. About a third of his business was in the electronics field. But with the fuse program in friendly hands, orders for components to Weeks' companies could amount to "many millions," this writer felt.(70a)

One cannot say, then, that the decision to divest the National Bureau of Standards of its ordnance divisions was born simply of a rational and dispassionate effort to improve basic research at the Bureau, even if American Machine and Foundry never took possession of the fuse program. In light of the adverse publicity, such a move would have been essentially unthinkable by the summer of '53.

Weeks and Wilson jointly announced the removal of the ordnance divisions on July 24, months before the Kelly Committee presented its proposals to Weeks, though it was justified as a recommendation of the evaluation group..(71)

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70a. New Republic, May 25, 1953, pp.11-12. This periodical ran a series of articles on the controversy in 1953 by a contributor known only as "Scientist Q," probably a Bureau staffer.

71. The New York Times, July 24, 1953. The actual transfer of the four divisions from Commerce to Defense was ordered to take place on Sept.27, 1953, "or as soon thereafter as possible." Federal Register, Sept. 25, 1953, pp.5713-4.

There is no doubt that Kelly and his investigators were in contact with Weeks as they conducted their evaluation, but it is not surprising, or even especially noteworthy, that divestiture was one of the specific recommendations in the final report. By the fall of 1953 all groups involved desperately sought a clean slate, and a reconciliation between the scientific community, and the departments of commerce and defense.

In light of the Bureau's treatment at the hands of a mercurial Commerce administration and an unpredictable Congress, there is another cogent interpretation of the loss of these four divisions. The research programs were right at the core of sensitive post-war defense technology. The Pentagon would certainly not want to rely on a volatile and vulnerable agency for such work.(72)

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Government scientists, and particularly Bureau scientists, felt very abused by the events of 1953. In November of that year, Allen Astin contracted Social Research, Inc. to survey the Bureau staff about morale and management. Astin outlined the purpose of the study to his division and section chiefs in the most sanguine terms

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72. This was expressed by Robert Huntoon in personal interview (op.cit.). The same view appears in an editorial, "NBS and Defense," The Washington Post, July 25, 1953.

possible. "Broadly, it is to assist the people at the Bureau to make it a still better place to work."(73)

SRI conducted the survey in the spring of 1954, and the summary results were actually more favorable than might be expected. Much of this can be attributed to the strong identification the staff had with the Bureau rather than Commerce.

"In the interviewing, we have gradually come to the conclusion that identification with the Bureau (even as a symbol) has probably increased in the past 15 months, due to the conflicts involving the Bureau, and that before that time there was probably still less awareness of and interest in the Bureau as a totality. Historically, we are informed, this was not always the case; before the wartime expansion there was a much stronger sense of community within the Bureau."(74)

In this connection, only 20 percent of the NBS professionals thought of the Bureau as part of the Department of Commerce, and yet far more than half felt that federal laws and the operation of Commerce needed to be addressed to effect improvement at the Bureau.(75)

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73. NBS Administrative Bulletin no. 53-66, NBS Archives, Administrative History Files, box 1.

74. "The Professional Employee at National Bureau of Standards Looks at the Bureau and his Work," Social Research, Inc., report, July 1954, p.10. NBS Archives, Administrative History File, box 2.

75. *ibid*, pp.16,17.

Dr.Astin and Mr.Ritchie

The context in which the events of 1953 were played out goes a long way toward explaining their resolution. While the removal of ordnance work from the Bureau can be seen, with hindsight, as healthy for basic research in the long run, this was not the case for the remainder of the decade. The very act of convoking the (Kelly) evaluation committee finds explanation only in a potent mixture of long-standing prejudices, business interests, and strenuous political conflicts. And yet we must also consider the presence of two particular personalities. To a considerable extent, the actions and pronouncements of those who wielded power were shaped by these personalities.

It is tempting and facile to dismiss Jess Ritchie as an unschooled , small businessan whose fortune it was to arrive at a critical place and time. But he was possessed of qualities which reveal it as unlikely that "anyman" would have caused the same stir in similar circumstances.

The most notable attribute was his unusual energy. Although Ritchie obviously relished telling of the work that went into developing his additive, where he "often worked all night," and "ran through more than 1600 different chemical blends,"(76) it could not have compared with his ardor in defending his product. By the time Ritchie came to Washington he had enlisted the aid of 24 senators and a congressman. He assembled a seemingly endless procession of

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76. Hearings, p.484

affadavits, tests, technical documents, and witnesses (both expert and nonscientific user). Ritchie did not cease petitioning the government until 1961, when his suit for damages (\$2.4 million) was dropped "with prejudice," meaning the case could not be reopened.(77)

Another unmistakable quality Ritchie possessed was a courage which bordered on vigilantism. He was not content to simply work through channels and remain backstage. He insisted on personally carrying his cry of foul play to any forum he could, including the nation's Capitol. He cannot accurately be accused of arrogance; he vehemently believed in his cause.(78)

Perhaps the best evidence of his abiding faith that 'he was right and they were wrong' was his willingness - his determination - to confront the scientific establishment face to face. At the center of Ritchie's defense was his contention that the conclusions of the Bureau concerning his additive were wrong, and he undertook to refute their experimental methods on a point to point basis.

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77. Science, vol.134 , December 29, 1961, p. \_\_\_\_\_

78. -Of course, it is possible that Ritchie wasn't telling all he knew. There was some discussion that an attorney from the Justice Department was putting together a case in 1959 to show that Ritchie really was a fraud, and even that some battery tests may have been doctored. (Astin interview, op.cit., comments of C.Eisenhart pp.16,17, comments of W.Weinstein p.17). Nothing substantial has ever come to light in this connection, however.

It was at Ritchie's instigation that the Bureau of Standards ran its final and most comprehensive series of tests on AD-X2, and Ritchie conferred personally with Allen Astin to establish what the testing procedure would be.(79) When the Bureau concluded that even these tests showed no operational merit for the additive, Ritchie insisted that NBS had deviated from agreed-upon procedure. While Ritchie was quite possibly assisted in preparing his technical refutations (by Laidler of Catholic University and Weber of MIT), he showed little hesitation in bringing up technical objections when on his own.

Mr.Ritchie's style is well demonstrated by an encounter in the spring of '53. On April 30, the Washington chapter of the Federation of American Scientists held a symposium where Hans Bethe, the celebrated theoretical physicist, was the principal speaker. After Bethe finished his address, in which he denounced Secretary Weeks, Ritchie addressed the assembled scientists from the floor. He insisted that his product had been wrongly judged by NBS, and that allowing mass resignations from the Bureau is Astin were dismissed would be tantamount to allowing all Army generals to quit

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79. The most complete NBS report on AD-X2 was submitted on April 16, 1953. It was a 100 plus page report with a 617 page appendix of data. NBS Report #2447, NBS Archives, Box 208.



because the White House refused to restore General MacArthur to command in the Far East.(80)

Finally, Jess Ritchie showed a certain genius during the hearings. Ritchie's persistent focus on the Bureau of Standards, first on technical issues and then building up a case of complicity with certain "interests," was masterful. His testimony shows him to be an extremely deft and articulate man. He knew just when to assert and when to retreat, when to play the expert and when to assume the humble inventor/entrepreneur.

At one juncture during questioning, he spontaneously weaves an argument for the possibility and precedent of scientific discoveries occurring accidentally. (Ritchie maintained that despite all their preparation and experimentation, he and Randall discovered AD-X2 by accident, which gave the whole thing considerable charm. See note 18.) This was true in battery science, he pointed out. Galvanic action itself was discovered accidentally. He then began elaborating on the concept of electrochemical cell potential, at which point the senators got lost. One of them

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80. The Evening Star, May 1, 1953. Ritchie's presence and participation were also reported in The Washington Post, May 1. Bethe is reported as responding to Ritchie's argument by saying, "I must take exception. Gen. MacArthur overstepped from the military field into politics. Secretary Weeks overstepped from politics to science." The reply was applauded vigorously.

told him not to get into "those technical terms." Ritchie returned, "I am not too good with them, either...", and began a much more visual description of the action of his additive.(81)

His skill in repartee was also quite remarkable. Senator Hubert Humphrey tried to deflate the scientific credibility of Ritchie's presentation by referring to the primary ingredients of AD-X2 by their household names, while quoting from a letter written by Merle Randall to the Bureau of Standards. Ritchie recognized that the language was not Randall's and called Senator Humphrey on it.

Mr.Ritchie: Senator, Dr.Randall never wrote "epsom salt" and "glauber salt" in any letter to anyone, I am sure.

Senator Humphrey: He [Merle Randall] wrote "anhydrous sodium sulfite" and "anhydrous magnesium sulfite." Anyone who has had the first year of college chemistry knows that one of those is glauber salt and one is epsom salt. One of them you give to horses and one to people; that is right, is it not?

Mr.Ritchie: I am not a veterinarian.

Senator Humphrey: I have taken chemistry. I am a pharmacist. Now, I happen to know that you give

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81. Hearings, pp.16,17.

glauber salt to animals and epsom salt to people.  
One is magnesium sulfate and one is sodium sulfate.  
Everybody knows that.

Mr.Ritchie: I don't give them to people or horses,  
either one. The salts in this material do not appear  
as epsom salt or glauber salt.(82)

Late

r, during questioning about commercial and military concerns  
who had used AD-X2, the following exchange took place

Senator Ferguson: The [Post Office] did issue a  
fraud order against you?

Mr.Ritchie: Yes, sir.

Senator Ferguson: Without a complaint being made?

Mr.Ritchie: Yes, sir; except from the Bureau of  
Standards.

Senator Ferguson: Except from the Bureau of  
Standards.

Mr.Ritchie: There is no complaint in the docket any  
place, except from the Bureau of Standards and the  
Post Office.

Senator Ferguson: You say that the military  
authorities have used it?

Mr.Ritchie: Yes, sir.

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82. Hearings, p.21.

Senator Ferguson: Have any of them complained?

Mr. Ritchie: Yes, sir; that they couldn't get any more of it. (83)

A most telling appraisal of Ritchie's interpersonal skills came from Allen Astin thirty years later.

"The best story I can give on the persuasiveness of Jess Ritchie involves my secretary in the Director's office at that time, Dorothy Kingsbury. This is important because Ritchie's persuasiveness was, I would say, a major factor in this thing becoming the controversy that it was...[W]e designed and ran a special test, to an appreciable extent designed by Ritchie, to try and settle the matter. Ritchie was in my office all the time the tests were being run and the results were being evaluated. He would sit with Miss Kingsbury in the outer office and chat with her. And when we finally got the results and Ritchie called me and I had to tell him that the results were not favorable to him, Miss Kingsbury said to me, 'I am sorry you had to tell him that. He is the nicest man.' He had her completely sold. He was a great guy." (84)

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83. Hearings, p.47.

84. Astin interview, 1983, op.cit., pp.12,13. NBS Archives.

In 1954 Ritchie ran for Congress on the Republican ticket versus the incumbent Democrat George Miller. His campaign literature described him as "strenuously opposed to threats to the small businessman."(85) He lost.

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85. The Christian Science Monitor, June 23, 1953.

Allen Astin's influence on the events of 1953 was more subtle than Jess Ritchie's, but no less powerful. He epitomized the career government scientist, and it was the character of that group which the scientific community and the wider public saw impugned in this controversy. The maltreatment of scientists-in-the-public-interest was being played out through Dr.Astin.

Astin was neither the aberrant scientific genius nor the political opportunist.(86) He had a solid educational background, and a long association with the Bureau. After receiving his Ph.D. from New York University in 1928, he served as a National Research Council Fellow at Johns Hopkins University (1928-1930), and then a Research Associate for both the NRC and the Utilities Research Commission, Inc., in a program carried out at the Bureau of Standards. He became a member of the Bureau staff in 1932. Over the next 15 years he published a modest but respectable number of articles in technical journals on radiometeorology, air capacitors, cosmic ray measurement and proximity fuse technology, and earned several patents.

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86. Daniel Kevles makes a most interesting study of public mistrust of science and scientists in the early Cold War years. (The Physicists, op.cit.,ch.23) The following excerpt is a gem in the history of that culture:

"In the mid-1950s a Monsanto Chemical Company recruitment film displayed a group of scientists in white coats and assured the audience: 'No geniuses here; just a bunch of average Americans working together.'" (p.383)

Dr. Astin began work on ordnance technology in 1940, becoming Chief of the Ordnance Development Division in 1948. He received awards for exceptional service from the Navy and Army in 1945 and 46 respectively. His work on proximity fuses even earned him the Presidential Certificate of Merit in 1948. It seems a bitter irony that in 1952 the Department of Commerce awarded him the Gold Medal for Exceptional Service. (87)

By the time he was appointed Director of NBS in June, 1952, Allen Astin had established himself as a competent scientist and administrator, who had conscientiously worked his way up to a position well-deserved. He was also something of a scientific war hero, with none of the questionable associations or personal ambitions which attended some of the country's scientific elite. He was no loose cannon, as Congress was apt to feel about Astin's predecessor, Edward Condon. An assault on Dr. Astin was an assault on the most conservative of public servants. Indeed, it constituted an attack on the ideal of responsible federal science.

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87. From a "Justification for Nomination for the President's Award for Distinguished Civilian Service: Allen Varley Astin," January, 1962. NBS Archives, Astin Files, box 2. Astin was also awarded "His Majesty's Medal for Service in the Cause of Freedom, 1947" for proximity fuse work.

It was not just his reputation which Astin carried with him to the Senate hearings. His department was so modest and gracious it must have been maddening to his foes. While the scientific professional groups, the press and members of Congress railed against Weeks, Sheaffer and the Administration in general, Astin refused to take part. All his public pronouncements were conservative, with words of conciliation and understanding. He never questioned the actions of the Secretary of Commerce, and always committed himself to following whatever course were for the good of the nation and the Bureau.

For example, on May 1, 1953, at the apex of the controversy, Astin addressed the American Physical Society on the role of the National Bureau of Standards. Astin opened his talk to the overflow audience acknowledging the present turmoil, but insisting that "[t]hese events have been sufficiently well publicized that there is no need for me to specify them." He then turned his attention to the beliefs of the Bureau of Standards concerning its importance to national welfare and security

Astin began each item with "we believe," speaking for the Bureau staff. His talk covered the extension of knowledge through experimental investigation and the place of precise standards in such a program, as well as the scrutiny of the scientific peer review process and the place



of NBS in a technological economy. His final article of faith was the following:

"We believe also that for federal employees loyalty to our country includes, in addition to the more commonly accepted values, loyalty to the institution for which we work and for its traditions, and loyalty to the administration which shapes its policy."(88)

During the same meeting, the Council of the American Physical Society unanimously approved their own strong statement on the harm which the Secretary of Commerce had perpetrated, and called for a 'hands-off' policy (that is, for scientific research to be free from "political or other pressures") to be clearly set forth by the Government. The same journal issue which carried Astin's talk also carried an editorial by G.P.Harnwell (Editorial Director, Physics Today) which was even more confrontational to Weeks, saying "...the Secretary of Commerce appears to believe that science and politics are miscible in the cauldron of the marketplace."(89)

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88. "The National Bureau of Standards," Physics Today, vol.6, June, 1953, pp.12-13.

89. G.P.Harnwell, "Integrity of Science in Government," Physics Today, vol. , June 1953, p.4. APS Council statement, *ibid*, p.20. Harnwell also suggested it might be appropriate to enact the Hyde bill (see note 48) and make the Bureau an independent agency.

Of course, one interpretation of Astin's extreme accommodation is simply that he was trying to salvage his job, which was still very much in jeopardy in May, 1953. There were reports that Astin was offered other (and much higher-paying) positions during this time, and he certainly would not have remained on the unemployment rolls for long. But it is equally obvious that he had a deep loyalty and affection for the Bureau, and leaving that association would have been traumatic.

However, if one is looking for indications that Astin changed his tune, or gave way to bitterness later in his career, the evidence just isn't there. Dr. Astin's position was confirmed by the fall of 1953, and he remained Director until 1969. He worked assiduously during his tenure for improved salary schedules and a broader and deeper research agenda for the Bureau. He presided over NBS during some of its greatest changes, such as the construction of the expansive facilities at the Bureau's present site in Gaithersburg, Maryland. Yet all the while he was very much the team player. Enhancing the Bureau was never to come at the cost of reduced favor with government.

A less hagiographic reading of Astin might be that the government scientist should make a concerted effort to fit in to society, and not allow the layman his natural tendency to isolate, and either elevate or denigrate, the scientists. But even this apparently pragmatic dictum was part of a

higher spiritual calling. His philosophy was clearly stated in another talk before the American Physical Society in 1957.

"Although the Government scientist has sometimes been maligned, it is my opinion that nowhere is there greater opportunity for service to society by scientists than in Government. ...It is not my belief that the Government trades on its purchase of scientific consciences. Those who emphasize the case where scientists have suffered on the Government payroll are doing the Government and Government-science a disservice. I say this knowing full well the implications of this statement in relation to my own personal history. I wish to emphasize that during my own 25-year-long Government career there has been considerable opportunity to work on things which interested me principally, and I have felt, throughout that career, that the work I was doing had more general social value and somewhat more scientific value than that I might have undertaken under other conditions. This sort of satisfaction I believe is repayment for much of the so-called disadvantages of Government employment you hear so much about."

Apart from finding satisfaction in conscientious

research, how else was the government scientist to serve society? For Astin, the answer was clear.

"Usually the science administrator in Government must deal with the nonscientist in Government. In this sense he is a link between research and public policy. In this respect his public responsibility is equally significant. He has the opportunities to educate and to bring his special knowledge to bear on those carrying out the people's mandate."

This last imperative was actually a corollary of Astin's advice to all scientists, whether administrators or not, that in their contacts with the public "their primary responsibility is to interpret as clearly, accurately, and simply as possible the nature of their work and its technical implications and limitations." (90) Every scientist, in his own sphere, was to be a benevolent agent for educating and improving society.

When the Senate Select Committee on Small Business reconvened on June 22, 1953, after nearly 3 months' recess they heard their first testimony from Jess M. Ritchie. (The first session, on March 31, heard only from Secretaries

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90. "Scientists and Public Responsibility," an address by Allen V. Astin to the American Physical Society given September 6, 1957. Reprint in Physics Today, vol.10, Nov., 1957, pp.23-27.

Weeks and Sheaffer.) Ritchie knew how to stir men's blood, and this he did for a day and a half. When Allen Astin came to the stand on the afternoon of the twenty third he faced an uphill battle.

As soon as Astin finished his prepared statement, Senator Edward Thye, chairman of the committee, began his attack. Despite his frequent insistence that he wanted "to believe in the Bureau of Standards." he bluntly questioned how a test lasting only a couple of weeks could ascertain anything about the life of a battery, and told Astin that the purchasing orders of the American businessman (who "is not fooled very often") mean more to him than "a technical test of a group of chemists standing over a bench in the laboratory..."(91)

The attack even grew vicious at one point. Senator Homer Ferguson questioned Astin about the Bureau's correspondence with the National Better Business Bureau. Astin said he felt what was done was simple dissemination of technical information. Ferguson countered by saying, "Do you believe then that the Bureau of Standards has authority to participate in an aggressive campaign to discredit any proprietary product?" This drew some protest from a committee member as to the propriety of the question.

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91. Hearings, p.228.

Ferguson turned back on Astin, asking him to identify what was wrong with the question. Astin replied, "Well, it is somewhat difficult to answer", to which Ferguson snapped "I thought it would be by the conduct that had taken place in this case; I thought it would be hard."(92)

But Astin kept his composure. He answered directly to all questions, not responding in kind when his inquisitors turned combative. Neither was he timid. He vigorously defended the actions of the Bureau, and in particular Condon and Vinal, whose actions were at the center of the presumed wrongdoings. It is not certain that any of the committee had changed his opinion by the end of the arduous cross examination. Senator Thye was still concerned that a small businessman had been dealt with unfairly. But he was prompted to offer a sentiment that might well serve as a statement of character for Allen Astin.

"As man to man, the last thing in the world that I would want to do would be to embarrass you, because personally I could accept you as one whom I would like to have as a friend, and that is my sincere feeling at this time."(93)

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92. Hearings, p.316.

93. Hearings, p.335.

## Epilogue

Certainly a controversy which caused so much embarrassment and hand-wringing must have resulted in some fundamental changes in science policy. For the Bureau of Standards, the outcome seems strangely unrelated to the original issue: excising the largest and most prominent research and development divisions followed by a period of meager support for the remaining programs. There was also a commitment to a joint decision-making policy for the Director of the Bureau and the Secretary of Commerce in future product-testing activities, and an enhancement of the Associate Director level of Bureau administration, both of which appeared more proximate to the AD-X2 controversy.

But a uniform, simple, and disinterested method of dealing with testing and regulation of new technology (be it useful, useless, or harmful) may never arrive. Even in the seemingly benign case of the publishing of technical information by a non-regulatory body, such as the Bureau, the issue is fraught with complexity. Allen Astin saw one side of the question quite clearly, though he still had an abiding faith that there was a right way for rational people to resolve such problems.

"...[A]ll progress in science and technology is regulatory. The invention of the incandescent lamp bulb made obsolete gas lights and so on, so that if you carry this too far, then you never disseminate

any scientific information because it might have some effect on curtailing the marketing of some products that it is related to."(94)

In their handling of the AD-X2 case, the Senate Select Committee on Small Business showed nothing more clearly than that they were incapable of establishing an agenda or rendering judgement. The participants had little awareness of even the fundamentals (Senator Hunt thought Edward Condon was still the Director of the Bureau when the hearings began), and their list of witnesses appears to have been determined by Ritchie and Weeks. They never solicited testimony from the Post Office, the FTC, the National Better Business Bureau, or even from Condon or Vinal. They made only furtive attempts to consider the role of regulatory agencies and even had difficulty establishing just what the National Better Business Bureau was. As a result, they constantly redirected their enquiry to the Bureau itself, for here they had a stationary target. And they constantly found themselves trying to evaluate the technical aspects of the additive testing, a task for which they were singularly incompetent. More than anything else, the Senate Committee hearings were an exercise in political posturing.

The legacy of even the narrow issue of battery additives is anomalous at best. As already mentioned, the Post Office dropped its then suspended fraud order against Ritchie in August, 1953. The charge of fraud requires an

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94. Hearings, p.315.



intent to deceive, and the Post Office found insufficient proof of this. This seems responsible, given what had come to light. (95)

The case of false advertising pursued by the FTC is not as simple, and it took much longer for them to pass judgement. An initial decision was reached on November 18, 1955, where the Commission's examiner ruled that in consideration of contradictory scientific evidence and strong user testimony (as Ritchie had pointed out in the Senate hearings, he had sold nearly half a million dollars worth of the additive, and there was not a single known user complaint), the Commission's counsel had "failed to prove false advertising charges..." In the "scientific testimony," the MIT test was now credited with concluding that AD-X2 "was capable of a significant and beneficial effect on batteries." (96)

This announcement prompted Senator Sparkman of the Senate Small Business Committee to proclaim: "This action is a spectacular triumph for all small businessmen in their fight to achieve equal treatment with big business at the hands of Government agencies." The Senator added, "This vindication of AD-X2 by the Federal Trade Commission, coupled with its earlier clearance on fraud charges by the

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95. The New York Times, Aug. 21, 1953.

96. Federal Trade Commission press release, Nov. 18, 1955. NBS Archives, box 202.