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DROPPING NUCLEAR BOMBS ON SPAIN

THE PALOMARES ACCIDENT OF 1966 AND THE U.S. AIRBORNE ALERT

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## **ABSTRACT**

On January 17, 1966, a U.S. B-52 bomber collided with a KC-135 tanker plane while refueling, causing both planes and four unarmed hydrogen bombs to fall near the Spanish village of Palomares. The conventional explosives in two of the bombs detonated causing radioactive plutonium to be spread over the village, and one bomb was missing in the Mediterranean Sea for nearly eighty days. The accident strained the already controversial relations with Spanish dictator Francisco Franco's regime, and renewed criticism both in the United States and Spain of the U.S. maintenance of military bases on Spanish territory. This thesis examines the reasoning of the U.S. government in continuing a program of flying nuclear armed bombers over its allies despite the serious foreign relations fallout that resulted from the Palomares accident.

## INTRODUCTION

On January 17, 1966, a serious accident occurred near Palomares, Spain when a U.S. B-52 bomber collided in midair with a KC-135 tanker plane while refueling. Seven of the eleven crew members of both planes were killed. The bomber was carrying four hydrogen bombs that fell to Earth when the plane broke up in midair. The bombs were unarmed, and therefore did not cause a nuclear explosion. However, the conventional explosives from two of the bombs detonated upon ground impact and spread radioactive plutonium over the small Spanish village of Palomares. It was the first time that an accident involving U.S. aircraft had caused the nuclear contamination of the soil of another country. Although three of the bombs were immediately recovered, one of them was lost at sea for eighty-one days, causing significant public embarrassment for the United States. The Palomares incident strained the already controversial relations with Spanish dictator Francisco Franco's totalitarian regime, and renewed criticism both in the United States and in Spain of America's maintenance of military bases on Spanish soil. Despite this horrific accident, the United States government continued its airborne alert program of flying bombers loaded with nuclear weapons until 1968 when another bomber carrying hydrogen bombs crashed and spread radioactive plutonium near the U.S. Air Force base at Thule, Greenland.

The main focus of this thesis will be to examine the reasoning of U.S. officials in continuing an airborne alert program that by the time of the Palomares accident had already outlasted its strategic usefulness. The facts of the Palomares incident will also be explored in this context since the financial and political costs of the accident should have made it clear to U.S. leaders that the airborne alert was a far too dangerous program to continue. In connection with this analysis, particular attention will be paid to the strain that the accident placed on U.S. relations with Spain.

## HISTORIOGRAPHY

There are a few books written that describe the Palomares incident in great detail, but have a different emphasis than this thesis since they do not concentrate on the incident's impact on the U.S. decision to continue the airborne alert. Three books were written shortly after the accident by reporters who covered the incident, Flora Lewis of the *New York Post*, Christopher Morris of the London-based *Daily Express* and Tad Szulc of the *New York Times*.<sup>1</sup> Since these books were published so close in time to the Palomares accident they may in some respects be considered primary sources, however they obviously have missed out on relevant later developments. For example, the U.S. government offered to build a desalination plant in Palomares one year after the incident as additional compensation for the psychological effects of the accident.<sup>2</sup> In addition, Randall Maydew, an engineer who chaired the Atomic Energy Commission/USAF Systems Analysis Team during the Palomares incident, wrote a 1997 book called *America's Lost H-Bomb! Palomares, Spain, 1966*.<sup>3</sup> These works are all valuable factual resources. However, they do have the tendency to concentrate on the search for the bomb that was missing for eighty-one days since that was the most worrisome aspect of the incident at the time. The emphasis in this thesis will be different as the diplomatic and radioactivity problems of the Palomares accident were issues that posed a much larger continuing threat as long as the airborne alert remained active.<sup>4</sup>

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<sup>1</sup> Flora Lewis, *One of Our H-Bombs is Missing...* (New York: McGraw-Hill Book Company, 1967); Tad Szulc, *The Bombs of Palomares* (New York: Viking Press, 1967); Christopher Morris, *The Day They Lost the H-Bomb* (New York: Coward-McCann, 1966).

<sup>2</sup> M. M., "Palomares to Get Desalting Plant," *Science*, New Series, 161, no. 3836 (July 5, 1968): 31.

<sup>3</sup> Randall C. Maydew, *America's Lost H-Bomb! Palomares, Spain, 1966* (Manhattan, KS: Sunflower University Press, 1997).

<sup>4</sup> A student named Bruce Campbell Adamson published a paper that he had originally written for his English class called *Spanish Fly is Radioactive* that is critical of the U.S. nuclear deterrent and of its actions with regard to the Palomares accident. Bruce Campbell Adamson, *Spanish Fly is Radioactive*, edited by Naomi Schultz (1993), 3. It also suggests (without support) the possibility that President Johnson was attempting to cover up the incident with the help of Ambassador Angier Biddle Duke and that the missing fourth bomb may have never actually been found. Adamson, *Spanish Fly is Radioactive*, 3, 33. The paper is interesting because it shows how strong people's feelings can be about the Palomares incident even so long after the event.

A recent article by David Stiles concentrates on the U.S. disclosure policy in the days following the Palomares accident.<sup>5</sup> The U.S. government had a long standing policy of not disclosing information with regard to nuclear weapons, and therefore did not publicly disclose that there was a hydrogen bomb missing until weeks after the accident. Stiles finds that the administration of President Lyndon B. Johnson “failed to develop an information strategy that would minimize the adverse publicity from such a high-profile accident.”<sup>6</sup> This failure caused more negative publicity than was necessary, especially since it took several months to clean up the accident debris and find the missing hydrogen bomb.<sup>7</sup>

Of course, there are many books written by historians concerning U.S. foreign relations with Spain during the decades preceding the accident.<sup>8</sup> The partnership between the United States and Spain was subject to considerable controversy at the time because Spain was ruled by Franco who had been friendly with the Axis powers during World War II. Only with the onset of the Cold War did the United States become interested in repairing this relationship so that it could build military bases in strategically-located Spain.<sup>9</sup> Thus, the base agreements became the central feature of U.S foreign policy towards Spain and the U.S. overflight rights made it possible for the Palomares accident to occur. The Palomares incident has been covered briefly in books relating to U.S.-

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<sup>5</sup> David Stiles, “A Fusion Bomb over Andalucía: U.S. Information Policy and the 1966 Palomares Incident,” *Journal of Cold War Studies* 8, no. 1 (Winter 2006): 50.

<sup>6</sup> Stiles, “A Fusion Bomb over Andalucía,” 49-67.

<sup>7</sup> Stiles, “A Fusion Bomb over Andalucía,” 50, 53. There have also been several articles in scientific journals that have explored the effects of radioactivity on the Palomares area and its people since the time of the accident. See P. Rubio Montero and A. Martin Sanchez, “Plutonium Contamination from Accidental Release or Simply Fallout: Study of Soils at Palomares (Spain),” *Journal of Environmental Radioactivity* 55 (2001): 157-65; P.I. Mitchell and others, “Perturbation in the <sup>240</sup>Pu / <sup>239</sup>Pu Global Fallout Ratio in Local Sediments Following the Nuclear Accidents at Thule (Greenland) and Palomares (Spain),” *Science of the Total Environment* 202 (1997): 147-53; C. Gascó, M. P. Antón and P. Rivas, “Man-Made Radioactivity in the Almanzora Gulch and Beach Edge of Palomares, Spain,” *Radiation Protection Dosimetry* 5, no. 4 (1995): 301-305; Emma Iranzo, Asuncion Espinosa and Javier Martinez, “Resuspension in the Palomares Area of Spain: A Summary of Experimental Studies,” *Journal of Aerosol Science* 25, no. 5 (July 1994): 833-41. See the Section of this Thesis entitled The Invasion for more information regarding the radioactive fallout in Palomares.

<sup>8</sup> Please see the attached Bibliography for a list of such sources.

<sup>9</sup> Arthur P. Whitaker, *Spain and Defense of the West: Ally and Liability* (New York: Harper & Brothers, 1961).



Spanish foreign relations due to its impact on the renewal of the base agreements in 1970.<sup>10</sup>

Nuclear accidents such as the Palomares incident are covered in books dealing with nuclear safety record of the United States.<sup>11</sup> Several texts discuss accidents that occurred as a result of the airborne alert.<sup>12</sup> The likelihood of accidents occurring was greater when nuclear bombs were continuously airborne, 24-hours a day. Scott D. Sagan's book, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons*, indicates that the airborne alert was temporary in nature and in particular concentrates on the Thule, Greenland accident as a major foul up that could have easily turned into a nuclear catastrophe.<sup>13</sup> The Thule monitoring station was considered a primary target of the Soviets and its potential destruction by a plane crashing into it could have been construed as a first strike by the United States.<sup>14</sup> Luckily the B-52 involved in the Thule incident crashed into the ice six miles away from the monitoring station. Sagan's book discusses the Palomares incident as one of a string of accidents that occurred with regard to the airborne alert.<sup>15</sup>

This thesis will concentrate on using primary sources such as government documents, newspaper articles and other relevant papers. Because the focus of this thesis will be on U.S. interpretations of the Palomares incident and its effects on U.S. policies, it will not be necessary to examine Spanish sources in depth. There are many articles in the historical *New York Times* database on the Palomares incident and governmental decisions made afterward. The U.S. Congress had several hearings regarding the Spanish base agreements that hold valuable information on the Palomares incident and the

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<sup>10</sup> Richard R. Rubottom and J. Carter Murphy, *Spain and the United States: Since World War II* (New York: Praeger Publishers, 1984); Victor Alba, *Transition in Spain: From Franco to Democracy*, translated by Barbara Lotito (New Brunswick, NJ: Transaction Books, 1978), 258.

<sup>11</sup> Scott D. Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton, NJ: Princeton University Press, 1993), 178-79; John May, *The Greenpeace Book of the Nuclear Age: The Hidden History, the Human Cost* (New York: Pantheon Books, 1989), 145-54.

<sup>12</sup> See Sagan, *The Limits of Safety*; May, *The Greenpeace Book of the Nuclear Age*.

<sup>13</sup> Sagan, *The Limits of Safety*, 167, 180-186.

<sup>14</sup> Sagan, *The Limits of Safety*, 180-84.

<sup>15</sup> Sagan, *The Limits of Safety*, 178-79.

airborne alert.<sup>16</sup> There are also official documents concerning the Palomares accident located in the Foreign Relations of the United States reference books for Western Europe and online in the Declassified Documents Reference System (DDRS).<sup>17</sup> The Air Force completed a study of the Palomares accident in 1975 that contains a wealth of information, including numerical data concerning the cost of the cleanup and recovery operations and amounts paid for damage claims.<sup>18</sup>

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<sup>16</sup> Spanish Base Agreement, Hearing Before the Committee on Foreign Relations United States Senate Ninety-First Congress, Second Session on Agreement of Friendship and Cooperation Between the United States of America and Spain, August 6, 1970 (August 26, 1970) (the “1970 Congressional Hearing”).

<sup>17</sup> *Foreign Relations of the United States, Western Europe*, vol. 12 (1964-1968) (“*FRUS*, vol. 12”); *Foreign Relations of the United States, Western Europe Region*, vol. 13 (1964-1968) (“*FRUS*, vol. 13”).

<sup>18</sup> W. M. Place, F. C. Cobb and C. G. Defferding, *Palomares Summary Report* (Kirtland Air Force Base, NM: Field Command Defense Nuclear Agency Technology and Analysis Directorate, January 15, 1975) (the “1975 Palomares Summary Report”).

## U.S.-SPANISH FOREIGN RELATIONS BEFORE THE ACCIDENT

The U.S. military bases in Spain had been developed as a result of three executive agreements signed between U.S. Secretary of State John Foster Dulles and Spanish Foreign Minister Alberto Martin Artajo on September 26, 1953.<sup>19</sup> The so-called Pact of Madrid allowed the United States to build three air bases, a naval base, and other military facilities in Spain.<sup>20</sup> In return, the United States provided large amounts of financial assistance to Franco's regime.<sup>21</sup> By 1970, the United States provided \$619.7 million in military assistance and \$1.333 billion in economic aid.<sup>22</sup>

Spain was of great strategic importance to the United States. In any prolonged conflict, the ability to resupply Western Europe with additional troops and materials through Spain from across the Atlantic would be crucial.<sup>23</sup> Bases in Spain would likewise provide more strategic depth to the North Atlantic Treaty Organization (NATO) defense structure covering Western Europe.<sup>24</sup> In contrast, if the Soviet Union controlled bases in Spain, the United States would have to expend resources to neutralize those bases in the event of a war.<sup>25</sup>

The Pact of Madrid was controversial in the United States at its inception and thereafter, and was a reversal of the formerly strained relationship between the U.S. government and the Franco regime following World War II.<sup>26</sup> Prior to the war, Franco's fascist regime had taken power with the support of both Nazi Germany and Mussolini's

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<sup>19</sup> Morris, *The Day They Lost the H-Bomb*, 28.

<sup>20</sup> Rodrigo Botero, *Ambivalent Embrace: America's Troubled Relations with Spain from the Revolutionary War to the Cold War* (Westport, CN: Greenwood Press, 2001), 157.

<sup>21</sup> David F. Schmitz, *Thank God They're On Our Side: The United States & Right-Wing Dictatorships, 1921-1965* (Chapel Hill: University of North Carolina Press, 1999), 168.

<sup>22</sup> 1970 Congressional Hearing, 39-40.

<sup>23</sup> Kenneth Maxwell, ed., *Spanish Foreign and Defense Policy* (Boulder, CO: Westview Press, 1991), 78.

<sup>24</sup> Maxwell, *Spanish Foreign and Defense Policy*, 78-79.

<sup>25</sup> Maxwell, *Spanish Foreign and Defense Policy*, 78.

<sup>26</sup> Edmund A. Gullion, "U.S. Security Policy in the Western Mediterranean: Spain and North Africa" in *The Western Mediterranean: Its Political, Economic, and Strategic Importance*, Alvain J. Cottrell and James D. Theberge, eds. (New York: Praeger Publishers, 1974), 207-08.

Italy in a bloody civil war.<sup>27</sup> Franco's Nationalists fought against a legitimately elected left-leaning Republican government that had been supported unofficially by France, the Soviet Union, and numerous American citizens who fought alongside the Republicans.<sup>28</sup> Although maintaining official neutrality during World War II, Franco provided Germany with necessary war-related raw materials and sent Spanish troops (the Blue Division) to fight with the Germans against the Soviet Union. Therefore, it is unsurprising that after the war President Franklin D. Roosevelt attempted to alienate the Franco regime in the hopes of an overthrow of his totalitarian government, and that President Harry S. Truman followed a similar course after Roosevelt's death.<sup>29</sup>

Franco may not have been a master statesman, but he was certainly the beneficiary of excellent timing. Franco had largely kept his political views to himself prior to the Spanish Civil War, and had only emerged as the Nationalists' leader after General José Sanjurjo, who was supposed to take over leadership of the new government, died unexpectedly in a plane crash at the start of the Civil War.<sup>30</sup> Then during World War II, while Adolf Hitler's forces sat on the Spanish border after crushing France, Franco avoided a doomed alliance with the Nazis by waiting for Hitler's territorial ambitions to move towards the East.<sup>31</sup> Franco's lucky timing likewise helped his regime to survive in the face of blistering world opinion after the war, as the Cold War deepened and the United States sought new allies to help in the defense of the West.<sup>32</sup>

Despite some indications of a liberalization of Franco's regime in response to U.S. and world disapproval, the policy of the United States towards Spain was changed to

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<sup>27</sup> Hugh Thomas, *The Spanish Civil War*, rev. ed. (New York: The Modern Library, 2001), 189-204.

<sup>28</sup> Thomas, *The Spanish Civil War*, 189-204.

<sup>29</sup> "Roosevelt Letter Condemns Franco; Acheson Makes Public Late President's Note Assailing Spain's Link With Axis," *New York Times*, September 27, 1945, p. 1.

<sup>30</sup> "Explain Sanjurjo Crash," *New York Times*, July 22, 1936, p. 3.

<sup>31</sup> Wayne H. Bowen, *Spaniards and Nazi Germany: Collaboration in the New Order* (Columbia: University of Missouri Press, 2000), 80-81.

<sup>32</sup> James W. Cortada, *Two Nations over Time: Spain and the United States, 1776-1977* (Westport, CN: Greenwood Press, 1978), 217-18.

one of conciliation with the onset of the Cold War.<sup>33</sup> In 1947, the National Security Council (NSC) proposed normalizing relations with Spain, because despite the fact that Franco ran a totalitarian regime, he certainly was no friend to communists.<sup>34</sup> Also, the U.S. military believed that Spain was strategically important and that air and naval bases built in Spain would provide an important defense against perceived Soviet hostility towards Western Europe.<sup>35</sup> Bases in Spain would allow control of entrance to the Mediterranean and give NATO forces an area to retreat to if the Soviets invaded Western Europe.<sup>36</sup> On June 8, 1950, Secretary of Defense Louis Johnson recommended to the Joint Chiefs of Staff (JCS) that military cooperation with Spain be accomplished either through a bilateral agreement or by bringing Spain into NATO.<sup>37</sup> Johnson noted military cooperation with Spain was necessary because of the then current inability of NATO to adequately defend France and the Low Countries against Soviet aggression.<sup>38</sup>

Both President Truman and Secretary of State Dean Acheson were reluctant to deal with Franco. On July 3, 1950, Acheson noted that military cooperation with Spain might be against the wishes of many European nations that opposed the Franco regime, and therefore should only be undertaken if all NATO members agreed.<sup>39</sup> However, in January 1951, the State Department's position was reversed by Secretary of State George C. Marshall and on February 1, 1951 the JCS proposed developing Spain's military potential for the defense of the West.<sup>40</sup> Both Britain and France refused to negotiate with

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<sup>33</sup> Cortada, *Two Nations over Time*, 217-18; Benjamin Welles, "Spain and the United States," in *Spain in the 1970s: Economics, Social Structure, Foreign Policy*, William T. Salisbury and James D. Theberge, eds. (New York: Praeger Publishers, 1976), 140.

<sup>34</sup> Max Gallo, *Spain Under Franco: A History*, translated by Jean Stewart (New York: E. P. Dutton, 1974), 218-220.

<sup>35</sup> Botero, *Ambivalent Embrace*, 121-23.

<sup>36</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 140.

<sup>37</sup> NSC 72, June 8, 1950, 2.

<sup>38</sup> NSC 72, June 8, 1950, 1.

<sup>39</sup> NSC 72/1, July 3, 1950, 2; Jill Edwards, "Spain, Drumbeat and NATO: Incorporating Franco's Spain in Western Defence," in *Securing Peace in Europe, 1945-62: Thoughts for the Post-Cold War Era*, Beatrice Heuser and Robert O'Neill, eds. (New York: St. Martin's Press, 1992) 169-70.

<sup>40</sup> NSC 72/4, February 1, 1951, 1; NSC 72/3, January 29, 1951, 1-2; NSC 72/2, January 15, 1951, 1-3.

regard to Spain's inclusion in NATO, so the United States proceeded in the hopes of securing a bilateral agreement with Spain.<sup>41</sup> Truman allowed the U.S. Chief of Naval Operations, Admiral Forrest Sherman, to visit Franco on July 16, 1951.<sup>42</sup> Their two-hour conversation ended with a gentleman's agreement for the construction of U.S. bases in Spain.<sup>43</sup> Thereafter, the Truman administration publicly stated that it was revising its previous negative policy towards Spain.

Spain's partnership with the United States helped modernize its military and gave Franco's regime a large degree of credibility, despite his statements during World War II that were critical of "decadent" democracies.<sup>44</sup> However, Franco still had to persuade skeptical Spanish Catholics of the benefits of this new partnership, and therefore Franco began negotiating a new concordat with the Vatican.<sup>45</sup> After two years of negotiating with both the Vatican and the United States, Franco signed a new concordat and then one month later signed the first 1953 base agreements, collectively called the Pact of Madrid, with the United States.<sup>46</sup> The Pact of Madrid was actually three executive agreements (one each for defense, economic aid and mutual defense assistance) that did not require U.S. Senate approval since they were not formal treaties.<sup>47</sup>

In connection with the Pact of Madrid, the United States also returned its ambassador to Spain and helped Franco's regime receive loans from American banks and private investment from American companies.<sup>48</sup> Franco agreed to let the United States build military bases anywhere in Spain in return for military assistance. However, the

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<sup>41</sup> NSC 72/4, June 5, 1951, 2; Jill Edwards, *Anglo-American Relations and the Franco Question, 1945-1955* (Oxford: Clarendon Press, 1999), 230.

<sup>42</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 140.

<sup>43</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 140.

<sup>44</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 141.

<sup>45</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 141.

<sup>46</sup> NSC 72/6 PR(2), February 15, 1954, 1-2; Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 141.

<sup>47</sup> NSC 72/6 PR(2), February 15, 1954, 1-2; Hal Klepak, *Spain: NATO or Neutrality?* (Kingston, Ontario: Center for International Relations, Queens University, 1980), 82.

<sup>48</sup> James W. Cortada, ed., *Spain in the Twentieth-Century World: Essays on Spanish Diplomacy, 1898-1978* (Greenwood Press: Westport, CN, 1980), 79.

1953 base agreements did not include a commitment by the United States to defend Spain, and Franco would continue to press for a defense commitment during subsequent negotiations as the base agreements came up for renewal.<sup>49</sup> The United States spent roughly \$400 million to build Strategic Air Command (SAC) bases at Torrejón (near Madrid), Zaragoza and Morón de la Frontera;<sup>50</sup> a 500-mile pipeline from the extremely important Rota Polaris submarine base to Zaragoza; and a number of radar sites and other military facilities throughout Spain.<sup>51</sup> U.S. military officers consulted with Franco on upgrading Spain's transportation system to improve U.S. (and Franco's) military movements. Franco also expertly negotiated for economic assistance from the United States with an estimated \$1.2 billion in U.S. wheat, cotton, tobacco, oil and other commodities being provided to Spain after 1953.<sup>52</sup>

Thus, the traditional explanation for the survival of the Franco regime after World War II is that U.S. Cold War support was instrumental. However, at least one historian has noted that the regime's survival could better be explained by other factors, such as that internal support for a revolution against Franco was weak due to the bloodshed of the Spanish Civil War and European governments were too focused on their own economic problems to significantly push for a regime change.<sup>53</sup> Also, U.S. monetary support during the 1950s under the Pact of Madrid was largely for building the bases and may have come too late to explain the survival of the Franco regime.<sup>54</sup>

During the 1950s and 1960s, Franco used his new partnership with the United States to attempt to address Spain's largest foreign policy concerns, namely being admitted to international organizations such as the United Nations (UN), NATO and the European Economic Community (EEC), and acquiring control of Gibraltar from the

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<sup>49</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 141-42.

<sup>50</sup> 1970 Congressional Hearing, 11.

<sup>51</sup> Klepak, *Spain: NATO or Neutrality?*, 82-85; Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 141.

<sup>52</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 142.

<sup>53</sup> Fernando Guirao, *Spain and the Reconstruction of Western Europe, 1945-57: Challenge and Response* (New York: St. Martin's Press, 1998), 189-95.

<sup>54</sup> Guirao, *Spain and the Reconstruction of Western Europe*, 189-95.

British.<sup>55</sup> After being denied entry to the UN in 1947, Spain was finally admitted to the UN with U.S. support in 1955.<sup>56</sup> Spain also sought membership in the EEC in 1962, but the EEC would refuse membership because of opposition to Franco's regime.<sup>57</sup> Franco similarly pushed for inclusion in NATO, presumably for the international recognition it would give his regime, however the base agreements and the physical presence of American material and personnel in Spain gave Franco many of the protections of the alliance without actually being committed.<sup>58</sup>

The U.S. government also wished to have Franco's Spain included in NATO.<sup>59</sup> As early as 1954, the Commander in Chief of Allied Forces, Central Europe, Marshal Alphonse P. Juin called for the inclusion of Spain in the NATO defense structure.<sup>60</sup> This proposal was rejected largely because of European antagonism towards the Franco regime.<sup>61</sup> During the 1960s, the United States continued to ask that Spain be included in NATO so that the alliance could share the burden of building up the Spanish bases and formally include Spain in the defense of the West, but other European nations similarly rejected this proposal.<sup>62</sup>

During the 1960s, relations cooled between the United States and Spain. President John F. Kennedy, despite being Catholic, was a liberal who had supported the

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<sup>55</sup> Stanley G. Payne, *The Franco Regime 1936-1975* (Madison, WI: University of Wisconsin Press, 1987), 531-33.

<sup>56</sup> NSC 5418/1 PR(1), March 28, 1956, 2; Christian Leitz and David J. Dunthorn, eds., *Spain in an International Context, 1936-1959* (New York: Berghahn Books, 1999), 301; Boris N. Liedtke, *Embracing a Dictatorship: US Relations with Spain, 1945-53* (New York: St. Martin's Press, 1998), 23-32.

<sup>57</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 144.

<sup>58</sup> E. Inman Fox, "Trends in Spanish Foreign Policy," *Naval War College Review* 23, no. 6 (February 1971): 26-27; James G. Holland, Jr. and Gregory A. Raymond, "Spain and NATO," in *Spain in the 1970s*, Salisbury and Theberge, 165.

<sup>59</sup> NSC 72/6, June 27, 1951, 1.

<sup>60</sup> Eugene Hinterhoff, "Spain and NATO," *Military Review* 51, no. 3 (March 1971): 40.

<sup>61</sup> Eugene Hinterhoff, "Spain and the Atlantic Alliance," *Revue Militaire Générale* 5 (May 1971): 662; Hinterhoff, "Spain and NATO," 40.

<sup>62</sup> Benny Pollack, *The Paradox of Spanish Foreign Policy: Spain's International Relations from Franco to Democracy* (London: Pinter Publishers, 1987), 25; Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 149. For more information on the pros and cons of Spain's entrance into NATO see Klepak, *Spain: NATO or Neutrality?*.



failed Bay of Pigs invasion of Cuba, a country with which Spain still had emotional ties.<sup>63</sup> Spaniards would also be displeased with anti-American riots in Panama in 1964 and President Johnson's intervention in the Dominican Republic in 1965.<sup>64</sup> Despite the U.S. embargo against Cuba, Spain would begin trading Spanish olive oil for Cuban tobacco and sugar on March 13, 1962, and by 1964 this commerce would total \$21 million.<sup>65</sup>

Despite some tension with the United States, Spain prospered economically during the 1960s as Franco lifted outdated restrictions against foreign investment and Spain was admitted to the World Bank and the International Monetary Fund.<sup>66</sup> During the decade, Spain's economic growth rate of 7.6 percent was the second highest in the world, behind Japan, with tourism making up an increasingly large amount of Spain's exports, reaching 70 percent of all visible exports by 1972.<sup>67</sup> By 1965 tourism generated over \$1 billion for Spain and by the end of the 1960s tourists outnumbered the Spanish population with nearly 30 million tourists visiting the country.<sup>68</sup>

In 1963, the base agreements came up for renewal for the first time. Spain's new Foreign Minister, Fernando Maria Castiella y Maiz, indicated that Spain desired a renegotiation of the agreements.<sup>69</sup> Castiella emphasized that Spain had incurred sizable risks of a Soviet nuclear attack due to the presence of U.S. bases on Spanish soil, especially since the base at Torrejon was a mere 15 miles from the Spanish capital, Madrid.<sup>70</sup> Spain's initial offer in the 1963 negotiations was for the United States to provide \$250 million in military aid in exchange for the renewal, a price which U.S. officials believed to be "grossly inflated" even though it was half of the original \$500

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<sup>63</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 142-43.

<sup>64</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 143.

<sup>65</sup> Holland and Raymond, "Spain and Nato," in *Spain in the 1970s*, Salisbury and Theberge, 159.

<sup>66</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 143.

<sup>67</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 143-44.

<sup>68</sup> Cortada, *Two Nations over Time*, 236.

<sup>69</sup> Morris, *The Day They Lost the H-Bomb*, 29.

<sup>70</sup> Morris, *The Day They Lost the H-Bomb*, 29.

million Spain had proposed two years before.<sup>71</sup> The negotiations floundered due to U.S. officials being unwilling to accept that Spain wanted a better deal until Franco sent a family friend of the Kennedys, Antonio Garrigues, to assist in negotiating the renewal.<sup>72</sup> Garrigues called on President Kennedy for assistance who responded that he wanted “to help meet Spain’s needs.”<sup>73</sup>

On September 26, 1963 (the date when the base agreements were set to expire), the base agreements were finally renewed for another five years, but Garrigues negotiating had allowed several concessions to the Franco regime in addition to continued economic aid.<sup>74</sup> Franco received a larger role in defense decision-making with the establishment of a bilateral committee for consultation on such matters.<sup>75</sup> Although Kennedy was still unwilling to provide Franco with a defense commitment, Secretary of State Dean Rusk and Castiella both signed a joint declaration stating that “a threat to either country, and to the joint facilities that each provides for the common defense, would be a matter of common concern and each country would each take such action as it may consider appropriate within the framework of its constitutional processes.”<sup>76</sup>

Although the Department of Defense continued to press for the Spanish bases even after the Palomares accident,<sup>77</sup> critics suggested that the strategic necessity of the bases was outdated. They noted that the strategic importance of Spain’s geographic location at the entrance to the Mediterranean had diminished over time as the number of U.S. Intercontinental ballistic missiles (ICBMs) increased, the U.S. reliance on nuclear bombers decreased, and détente towards the Soviet Union became American policy.<sup>78</sup> Critics would long question the necessity of the bases, especially considering that they

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<sup>71</sup> NSC Memorandum 247, May 27, 1963, 1; Rubottom and Murphy, *Spain and the United States*, 79.

<sup>72</sup> Welles, “Spain and the United States,” in *Spain in the 1970s*, Salisbury and Theberge, 143.

<sup>73</sup> Rubottom and Murphy, *Spain and the United States*, 81-82.

<sup>74</sup> Morris, *The Day They Lost the H-Bomb*, 29.

<sup>75</sup> Morris, *The Day They Lost the H-Bomb*, 29.

<sup>76</sup> Welles, “Spain and the United States,” in *Spain in the 1970s*, Salisbury and Theberge, 143.

<sup>77</sup> Clark M. Clifford, “Letter from Secretary of Defense Clifford to Secretary of State Rusk,” Washington, June 19, 1968 in *FRUS*, vol. 12, 411-13.

<sup>78</sup> Welles, “Spain and the United States,” in *Spain in the 1970s*, Salisbury and Theberge, 136.

were conceived at a time when the B-47 bomber was the prime American deterrent.<sup>79</sup> Other factors that decreased the significance of the bases in Spain over time were the development of longer range bombers, the deployment of nuclear-powered submarines that could remain submerged for extended periods of time, and the continued maintenance of other forward bases in Greece, Turkey and Italy.<sup>80</sup> Therefore, the relative importance of the joint U.S.-Spanish bases was debatable when the Palomares accident occurred in 1966.

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<sup>79</sup> Holland and Raymond, "Spain and Nato," in *Spain in the 1970s*, Salisbury and Theberge, 168-70.

<sup>80</sup> 1970 Congressional Hearing, 43-44.

## THE AIRBORNE ALERT PRIOR TO THE ACCIDENT

The detonation of two atomic bombs on Japan and the onset of the Cold War changed the readiness requirements of military forces around the world. In the past, the armed forces of nations generally mobilized in times of war and were not expected to be on constant alert. However, the development of bombers that carried armaments that could obliterate a nation's defenses and civilian populations meant that armed forces needed to be able to respond in minutes based on immediate real-time intelligence.<sup>81</sup> Although bombers had generally been considered offensive weapons, they quickly became viewed as a defensive necessity by the United States since the threat of a retaliatory strike with nuclear bombs became viewed as the only deterrent to a surprise attack by the Soviet Union.<sup>82</sup>

In response to this changing environment, SAC was established on March 21, 1946 as a major command of the U.S. Army Air Forces to direct the growing force of U.S. nuclear-armed bombers.<sup>83</sup> The development of SAC was necessary to give credibility to the ability of the United States to retaliate in the event of Soviet aggression.<sup>84</sup> Also, the United States began to maintain forward bases around the world in order to allow the early, limited-range SAC bombers to reach targets within the Soviet Union (in conjunction with aerial refueling).<sup>85</sup>

In addition, the United States built a series of warning radars (the "Pinetree Line") in Canada in 1952 followed by the Distant Early Warning (DEW) line in 1953.<sup>86</sup> These

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<sup>81</sup> Paul Bracken, *The Command and Control of Nuclear Forces* (New Haven, CN: Yale University Press, 1983), 19.

<sup>82</sup> David Goldfischer, *The Best Defense: Policy Alternatives for U.S. Nuclear Security from the 1950s to the 1990s* (Ithaca, NY: Cornell University Press, 1993), 1-3.

<sup>83</sup> J. C. Hopkins and Sheldon A. Goldberg, *The Development of Strategic Air Command 1946-1986 (The Fortieth Anniversary History)* (Office of the Historian, Headquarters Strategic Air Command, Offutt Air Force Base, Nebraska, September 1, 1986), 2.

<sup>84</sup> Samuel R. Williamson, Jr. and Steven L. Rearden, *The Origins of U.S. Nuclear Strategy, 1945-1953* (New York: St. Martin's Press, 1993), 162.

<sup>85</sup> Williamson and Rearden, *Origins of U.S. Nuclear Strategy*, 169.

<sup>86</sup> Bracken, *Command and Control*, 11.

radars would give SAC two hours warning of the approach of Soviet bombers.<sup>87</sup> During the mid-1950s, SAC implemented further advances in early warning systems, including forward line-of-sight radars built in Turkey and Iran, U-2 flights over the Soviet Union, and the development of the U.S. Navy's Sound Surveillance System (SOSUS) that provided acoustic sensors designed to detect Soviet nuclear-armed submarines off the Atlantic coast.<sup>88</sup>

During the late 1950s, the U.S. Air Force became increasingly suspicious of Soviet motives and the U.S. ability to retaliate. In September, 1957, a special U.S. Air Force panel predicted that by 1963 the Soviets would be capable of destroying so much of U.S. strategic forces in a first strike that they "might well consider that they would be in a position to initiate general war with very little risk of retaliatory major destruction to their national strengths."<sup>89</sup> In response to the launch of Sputnik in October 1957, the United States hurried to implement a series of advanced radars known as the Ballistic Missile Early Warning System (BMEWS) that would give adequate warning in the case of a Soviet nuclear missile attack.<sup>90</sup> However, the BMEWS radars, which would consist of large radars in Alaska, Greenland, and Great Britain, were not expected to be fully operational until 1963, and in fact the first radar at Thule Air Base, Greenland did not begin operating until December 31, 1960.<sup>91</sup> Therefore, the U.S. military argued that it should keep a small number of B-52 bombers on continual airborne alert until U.S. radar systems were adequate to give the necessary warning of a Soviet missile attack.<sup>92</sup>

Since October 1, 1957, SAC had already been keeping a significant part of their aircraft force on ground alert with bombers loaded with weapons and ready for takeoff within 15 minutes (this ground alert would grow to fifty percent of the total force by

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<sup>87</sup> Bracken, *Command and Control*, 11.

<sup>88</sup> Bracken, *Command and Control*, 13-14, 34.

<sup>89</sup> Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), 155.

<sup>90</sup> Bracken, *Command and Control*, 15.

<sup>91</sup> Bracken, *Command and Control*, 15.

<sup>92</sup> Sagan, *The Limits of Safety*, 167.

1961).<sup>93</sup> But in November 1957, the Commander in Chief of SAC, General Thomas S. Power, told a surprised press that “Day and night, I have a certain percentage of my command in the air” and that the “planes were bombed up and they don’t carry bows and arrows.”<sup>94</sup> This message, clearly directed at the Soviets, illustrates the deterrent effect that SAC was hoping to produce by utilizing the airborne alert.<sup>95</sup> As General Power explained to Congress while arguing for the airborne alert in February 1959, “We must impress Mr. Khrushchev that we have it, and that he cannot strike this country with impunity.”<sup>96</sup> SAC crews also preferred the airborne alert exercises (originally code-named Head Start I and later, Head Start II),<sup>97</sup> to the ground alert because as one crewman stated, “Instead of sitting around and waiting for something to happen, I do what I know and like best – flying.”<sup>98</sup> The airborne alert was also considered necessary to show America’s military might, to allow the easy expansion of the airborne alert in case of a crisis (as was actually done during the Cuban missile crisis), and to give SAC an advantage in case of an attack since the bombers would be closer to their targets.<sup>99</sup>

During 1960, the possibility of an accident “near populated areas” due to the airborne alert was contemplated by officials who anticipated between seven to twenty aircraft accidents per year if one-fourth of the bomber force was kept airborne.<sup>100</sup> Although it was expected that there might be some incidents of nuclear contamination,

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<sup>93</sup> Henry M. Narducci, *Strategic Air Command and the Alert Program: A Brief History* (Offutt Air Force Base, NE: Office of the Historian, Headquarters Strategic Air Command, 1988), 1-3, 8; Hopkins and Goldberg, *Development of Strategic Air Command*, 65.

<sup>94</sup> Narducci, *Strategic Air Command and the Alert Program*, 4.

<sup>95</sup> See also Memorandum for Dr. G. B. Kistiakowsky from the Missiles Panel, dated July 11, 1960, declassified on April 4, 1994, located in the FSU Online Declassified Documents Reference System (“DDRS”), 1.

<sup>96</sup> Narducci, *Strategic Air Command and the Alert Program*, 6.

<sup>97</sup> Hopkins and Goldberg, *Development of Strategic Air Command*, 74.

<sup>98</sup> Narducci, *Strategic Air Command and the Alert Program*, 6.

<sup>99</sup> Sagan, *The Limits of Safety*, 167.

<sup>100</sup> Memorandum for Dr. G. B. Kistiakowsky from the Missiles Panel, dated July 11, 1960, declassified on April 4, 1994, located in DDRS, 1-2.

the chance of a nuclear explosion was considered “extremely small.”<sup>101</sup> It should be noted that the safety features on nuclear weapons during the 1960s would not meet current safety standards. Military leaders considered the criticism that the airborne alert might be provocative to the Soviets “illogical,” nonetheless they recommended that only one-eighth of the bomber force (instead of one-fourth) be kept airborne so that it would not unduly antagonize the Soviets.<sup>102</sup> It was noted that the need for the airborne alert was “probably greatest in the immediate future, before the [BMEWS] and significant numbers of Polaris submarines are operational.”<sup>103</sup>

In 1961, the airborne alert, now called operation Chrome Dome, was continued as “a temporary emergency measure” with 12 B-52s airborne at all times.<sup>104</sup> By that time, SAC had flown more than 6000 airborne alert sorties (with 12 sorties being flown per day).<sup>105</sup> The stated purpose of the program was to give the United States “a capability to fly one-eighth of the B-52 force on continuous airborne alert for 12 months if required by a national emergency.”<sup>106</sup> SAC formally called this program “the Airborne Alert Indoctrinal Training Program.”<sup>107</sup> The airborne alert used bombers armed with three to four thermonuclear bombs and some flights also carried two Hound Dog missiles armed with nuclear warheads under their wings designed to deal with ground and air defenses.<sup>108</sup> The planes carried bombs that were assigned to predetermined targets and

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<sup>101</sup> Memorandum for Dr. G. B. Kistiakowsky from the Missiles Panel, dated July 11, 1960, declassified on April 4, 1994, located in DDRS, 2.

<sup>102</sup> Memorandum for Dr. G. B. Kistiakowsky from the Missiles Panel, dated July 11, 1960, declassified on April 4, 1994, located in DDRS, 2.

<sup>103</sup> Memorandum for Dr. G. B. Kistiakowsky from the Missiles Panel, dated July 11, 1960, declassified on April 4, 1994, located in DDRS, 3.

<sup>104</sup> Memorandum from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 2.

<sup>105</sup> Narducci, *Strategic Air Command and the Alert Program*, 5.

<sup>106</sup> Memorandum from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 2.

<sup>107</sup> John W. Finney, “U.S. Reviews Need for H-Bomb Alert,” *New York Times*, February 28, 1968, p. 1; Memorandum for the President from Cyrus R. Vance to President Johnson, dated May 4, 1964, partially declassified on January 31, 1997, located in DDRS, 1.

<sup>108</sup> Sagan, *The Limits of Safety*, 169; Szulc, *The Bombs of Palomares*, 17.

they flew along three assigned routes chosen with the intent that each aircraft could attack the Soviet Union during most of its flight.<sup>109</sup> The northern route stayed close to the North American continent, flying around the Newfoundland coast, over Greenland, across the Arctic Ocean and then through Alaska before heading to bases in the western United States.<sup>110</sup> Another bomber route took B-52s over Ontario and circled around Thule, Greenland.<sup>111</sup> The southernmost route went across the Atlantic Ocean, refueled over Spain and then began circling over the Mediterranean Sea.<sup>112</sup> The routes were approved by the Secretary of Defense and the State Department, and the President was generally informed of the routes.<sup>113</sup> The major concern with respect to the flights was staying out of the airspace of the Soviet Union and Warsaw Pact countries.<sup>114</sup> However, all three routes entailed nuclear armed bombers flying over territory held by America's allies. Between 1961 and 1968, bombers loaded with thermonuclear weapons were flying somewhere along the predetermined airborne alert routes 24 hours a day.<sup>115</sup>

During the high point of the Cuban missile crisis in October 1962, the airborne alert was significantly expanded from 12 sorties to 75 sorties being flown daily for 28 days.<sup>116</sup> The reason given for the increased airborne alert was to deter the Soviet Union from making any aggressive moves in response to U.S. actions against Cuba and U.S. leaders generally believed that the airborne alert had succeeded during the crisis in this respect.<sup>117</sup> In fact, President Kennedy praised the program stating that “[t]he airborne

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<sup>109</sup> Sagan, *The Limits of Safety*, 169; Memorandum of Conference with the President, dated March 9, 1959, declassified on September 10, 1996, located in DDRS, 1.

<sup>110</sup> Sagan, *The Limits of Safety*, 169.

<sup>111</sup> Sagan, *The Limits of Safety*, 172.

<sup>112</sup> Sagan, *The Limits of Safety*, 169.

<sup>113</sup> Sagan, *The Limits of Safety*, 173,

<sup>114</sup> Memorandum of Conference with the President, dated March 9, 1959, declassified on September 10, 1996, located in DDRS, 3; Sagan, *The Limits of Safety*, 68.

<sup>115</sup> Sagan, *The Limits of Safety*, 169.

<sup>116</sup> U.S. Government Summary on B-52 Airborne Alert, dated November 11, 1965, declassified on May 23, 1990, located in DDRS, 1; Sagan, *The Limits of Safety*, 65.

<sup>117</sup> Sagan, *The Limits of Safety*, 67.



alert provided a strategic posture under which every United States force could operate with the relative freedom of action.”<sup>118</sup>

However, the possibility of an accident or provocation of the Soviet Union had also been proposed as reasons that the airborne alert was not a resounding success during the crisis or thereafter.<sup>119</sup> Significant changes had occurred since the time of the first use of the airborne alert, that may have caused its necessity to have greatly diminished.<sup>120</sup> By 1963, the United States had developed the Minuteman and Titan II ICBMs that were accurate, reliable, could be launched nearly instantaneously, and had significantly lower operational costs than manned bombers.<sup>121</sup> After April 1964, the United States would have a larger number of Minuteman missiles on alert than bombers on ground alert, and the numerical difference would continue to grow.<sup>122</sup> As stated in a 1965 U.S. Department of Defense report:

The [airborne alert] was proposed and approved in an environment in which bombers were our primary strategic weapon, and their survival on the ground or ability to get airborne during an attack was questionable. Since then, however, strategic warning systems (Ballistic Missile Early Warning System, backed up with Over The Horizon radar) have greatly improved, and 50% of the B-52 force is now on ground alert with the demonstrated capability to get airborne in less than available BMEWS warning time. Although this does not ensure survival, it makes

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<sup>118</sup> Sagan, *The Limits of Safety*, 67 quoting a safety award given to SAC on December 7, 1962 and Kennedy’s speech during the ceremony.

<sup>119</sup> Sagan, *The Limits of Safety*, 74-77.

<sup>120</sup> John W. Finney, “U.S. Reviews Need for H-Bomb Alert,” *New York Times*, February 28, 1968, p. 1; Memorandum from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 1-2; U.S. Government Summary on B-52 Airborne Alert, dated November 11, 1965, declassified on May 23, 1990, located in DDRS, 1-2.

<sup>121</sup> Narducci, *Strategic Air Command and the Alert Program*, 14; Hopkins and Goldberg, *Development of Strategic Air Command*, 126.

<sup>122</sup> Narducci, *Strategic Air Command and the Alert Program*, 14.

destruction on the ground less likely than when the [airborne alert] was first established.<sup>123</sup>

The same report stated that \$63 million could be saved by ending the airborne alert, as well as additional savings that could be realized “by closing 2 Spanish bases whose sole purpose is to serve as a base for KC 135 tankers which refuel B-52’s on airborne alert.”<sup>124</sup> Also, during the late 1950s and 1960s several groups within the United States had been increasingly vocal in their opposition to U.S. nuclear programs in general.<sup>125</sup> Therefore, by the time of the Palomares accident the need for nuclear weapons programs such as the airborne alert were subject to considerable debate, much like the need for the Spanish bases themselves.

There are sociological theories regarding the likelihood of accidents in circumstances that are similar to the Palomares incident. Scott D. Sagan, an Assistant Professor of Political Science at Stanford University, notes in his book, *The Limits of Safety: Organizations, Accidents and Nuclear Accidents*, that there are two schools of thought with regard to the likelihood of accidents in organizations using highly hazardous technologies: the high reliability school and normal accidents theory. The high reliability school is more optimistic with regard to the likelihood of accidents. It states that an organization can be successful in preventing accidents in highly dangerous fields when the organization makes it an important goal to prevent accidents, uses redundancy in both technical safety devices and in personnel, provides decentralized decision-making so that low ranking personnel may act quickly in the event of an accident, and that the organization learns from failures and adjusts its procedures accordingly.<sup>126</sup>

The other approach, normal accidents theory, suggests that accidents will occur regardless of steps that organizations take to prevent them. It counters that organizations

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<sup>123</sup> U.S. Department of Defense Summary on B-52 Airborne Alert, dated November 11, 1965, declassified on May 23, 1990, located in DDRS, 1-2.

<sup>124</sup> U.S. Department of Defense Summary on B-52 Airborne Alert, dated November 11, 1965, declassified on May 23, 1990, located in DDRS, 1-4.

<sup>125</sup> Lawrence S. Wittner, *The Struggle Against the Bomb: Resisting the Bomb, vol. 2: A History of the World Nuclear Disarmament Movement, 1954-1970* (Stanford, CA: Stanford University Press, 1997), 51-59; Milton S. Katz, *Ban the Bomb: A History of SANE, the Committee for a Sane Nuclear Policy, 1957-1985* (New York: Greenwood Press, 1986), 77-81.

<sup>126</sup> Sagan, *The Limits of Safety*, 14-27.

do not have clear goals, that redundancy can cause accidents by making personnel lackadaisical, that low ranking personnel may not have time to make decisions in the event of an accident in highly dangerous and time-dependent industries, and that learning often does not take place in organizations that are politicized with varying interests amongst employees and when causes of accidents are not necessarily clear.<sup>127</sup> Although both theories draw conclusions about the likelihood of accidents, it could be said that high reliability theory simply states what organizations can do to prevent accidents and that normal accidents theory simply states why they occur nonetheless. Also, it should be noted that nuclear weapons pose additional safety problems that may not be encountered in other hazardous industries, such as the likelihood of an accident increasing in times of international tension, such as the Cuban missile crisis.<sup>128</sup>

Several accidents occurred with regard to the airborne alert prior to the Palomares incident that would seem to suggest that the pessimistic conclusion of normal accidents theory might be correct. Although it could be argued that since there has never been an accidental detonation of a nuclear weapon this indicates that they are safe, the known accidents that have occurred with regard to the airborne alert would seem to indicate otherwise.<sup>129</sup> In January 1961, a airborne alert B-52 bomber broke up in midair near Goldsboro, North Carolina and its unarmed bombs were jettisoned from the plane.<sup>130</sup> On March 14, 1961, an airborne alert B-52 with two weapons onboard crashed near Yuba City, California after failing to meet with its refueling tanker.<sup>131</sup> On August 23, 1962, an airborne alert B-52 flew off course by more than 1,300 miles due to a navigational error.<sup>132</sup> The B-52's course over the Arctic Ocean headed straight towards the Soviet Union, and the bomber was only 300 miles away from Soviet airspace when the error was

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<sup>127</sup> Sagan, *The Limits of Safety*, 28-43.

<sup>128</sup> Bruce G. Blair, *The Logic of Accidental Nuclear War* (Washington, DC: The Brookings Institution, 1993), 27-31; Richard Ned Lebow, *Nuclear Crisis Management: A Dangerous Illusion*, (Ithaca, NY: Cornell University Press), 1987, 17-19.

<sup>129</sup> Sagan, *The Limits of Safety*, 11-12.

<sup>130</sup> "Previous Atom Accidents," *New York Times*, January 23, 1968, p. 12; Sagan, *The Limits of Safety*, 188, 202.

<sup>131</sup> "Previous Atom Accidents," *New York Times*, January 23, 1968, p. 12; Sagan, *The Limits of Safety*, 202.

<sup>132</sup> Sagan, *The Limits of Safety*, 74.

detected by America's ground control in Alaska.<sup>133</sup> This mistake may have been detected by the Soviets since their longest range interceptors had a range of over 400 miles, however it is not known at this time whether they were aware of this mistake due to a lack of available Soviet documents on this point.<sup>134</sup> On October 15, 1962, in an incident similar to the Palomares accident, a B-52 bomber collided with a KC-135 tanker plane and accidentally dropped two unarmed nuclear bombs on Kentucky.<sup>135</sup> The bombs were quickly recovered and luckily caused no large problems.<sup>136</sup>

Although not connected with the airborne alert directly, unarmed nuclear bombs had also been accidentally released from bombers on at least two other occasions.<sup>137</sup> On February 5, 1958, a B-47 bomber from Hunter Air Force Base, Georgia accidentally jettisoned part of a nuclear weapon after suffering a midair collision.<sup>138</sup> On March 11, 1958, a bomber accidentally dropped parts of a nuclear weapon on a house in Florence, South Carolina, after the plane's bomb-lock system malfunctioned.<sup>139</sup> Six people were injured when the weapon's TNT trigger exploded.<sup>140</sup>

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<sup>133</sup> Sagan, *The Limits of Safety*, 74.

<sup>134</sup> Sagan, *The Limits of Safety*, 74.

<sup>135</sup> "Previous Atom Accidents," *New York Times*, January 23, 1968, p. 12; Sagan, *The Limits of Safety*, 202; Szulc, *The Bombs of Palomares*, 28.

<sup>136</sup> Szulc, *The Bombs of Palomares*, 28.

<sup>137</sup> Sagan, *The Limits of Safety*, 188-89.

<sup>138</sup> "Previous Atom Accidents," *New York Times*, January 23, 1968, p. 12.

<sup>139</sup> "Previous Atom Accidents," *New York Times*, January 23, 1968, p. 12.

<sup>140</sup> Szulc, *The Bombs of Palomares*, 82, 92. This incident would lead the military to develop a system of locking in nuclear weapons in flight. Therefore, in the event of an Palomares-type accident, the weapons could not be easily jettisoned from the bomber and they could be more easily recovered. Szulc, *The Bombs of Palomares*, 82. For more information on previous accidents involving nuclear weapons, see "Previous Atom Accidents," *New York Times*, January 23, 1968, p. 12 and Stiles, "A Fusion Bomb over Andalucía," 51.

## THE COLLISION

On Sunday, January 16, 1966, it was a matter of routine when the crew of the B-52 Stratofortress Number 256, whose call name was Tea-16, took off from Seymour Johnson Air Force base at Goldsboro, North Carolina to fly along the southernmost route of the airborne alert.<sup>141</sup> The SAC 51st Bomber Squadron never knew until they started back whether their air alert mission was just an exercise. The missions lasted 24 hours in part because that was the amount of time it took to get the bombers to their failsafe line and back, and also because that was as long as the crew could be expected to function alertly.<sup>142</sup> As was common practice, the ground alert crew had checked out bomber Number 256 the day before so that the crew could use the extra hours at home before the 24-hour flight.<sup>143</sup> When Tea-16 left Goldsboro, it was carrying four 1.5-megaton Mark 28 hydrogen bombs.<sup>144</sup> The plane would never return.

The seven members of the B-52 bomber crew were all experienced in their respective aerial responsibilities. Captain Charles J. Wendorf, the aircraft commander, had spent 2109 hours of his 2500-total flight hours flying B-52s for five and a half years prior to the accident.<sup>145</sup> First Lieutenant Michael J. Rooney, the copilot, had joined the Air Force in 1962 and had flown jets during that time.<sup>146</sup> Major Larry G. Messinger was also assigned to the flight as an additional pilot because of the length of the airborne alert mission.<sup>147</sup> He had flown heavy bombers in World War II and Korea and had 4800 hours

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<sup>141</sup> 1975 Palomares Summary Report, 13; "U.S. Said to Hunt Lost Atom Device," *New York Times*, January 19, 1966, p. 1; Lewis, *One of Our H-Bombs is Missing*, 4-5.

<sup>142</sup> Lewis, *One of Our H-Bombs is Missing*, 4.

<sup>143</sup> Lewis, *One of Our H-Bombs is Missing*, 4.

<sup>144</sup> Szulc, *The Bombs of Palomares*, 17. The exact megaton amount of the hydrogen bombs has never been released by the U.S. government. However, a member of the U.S. Senate has indicated that the bombs were likely 1.5 megatons each. Some reports stated that the bombs were much more powerful, with one reporting that each bomb was as high as 25 megatons. John W. Finney, "U.S. Concedes Loss of H-Bomb in Spain," *New York Times*, March 2, 1966, p. 1; Tad Szulc, "Palomares Learns to Love the Bomb," *New York Times*, February 20, 1966, p. SM12.

<sup>145</sup> Szulc, *The Bombs of Palomares*, 18.

<sup>146</sup> Szulc, *The Bombs of Palomares*, 19.

<sup>147</sup> Szulc, *The Bombs of Palomares*, 18-19.

of flight time, including six years of flying as aircraft commander on B-52s.<sup>148</sup> With the exception of Messinger, the entire B-52 crew had been flying together for over a year.<sup>149</sup>

Ariel refueling was required to keep B-52s airborne during these lengthy missions. The first refueling of Tea-16, as well as the refueling of its companion bomber (B-52 bombers on airborne alert flew in pairs), went without incident as it had on countless other trips before.<sup>150</sup> The seven crew members knew the routine part of the flight plan well and had also studied intensively the combat mission flight plan they would follow over enemy territory, if they were so ordered by the President of the United States.<sup>151</sup> This top-secret plan contained predetermined target locations (presumably within the Soviet Union) and was carried in a rectangular, black, leather case, which was marked with red stripes and had the words Top Secret printed unimaginatively upon its surface.<sup>152</sup>

The second refueling over Spain also went without incident when a tanker plane from the joint U.S.-Spanish Air Force base at Torrejón, near Madrid, refueled them with the 40,000 gallons of jet fuel they would need while circling over the Mediterranean for approximately ten hours.<sup>153</sup> When they reached their failsafe line and continued circling near the Turkish-Soviet border they finally knew that this was just another exercise.<sup>154</sup> While maintaining alert at the failsafe line, the crew of the B-52 was required to be constantly attentive to their location so that they did not fly over non-allied nations.<sup>155</sup>

When it was time to return home, bomber Number 256 flew back to Spain to meet a KC-135 tanker plane (officially attached to the Bergstrom Air Force Base near Austin,

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<sup>148</sup> Szulc, *The Bombs of Palomares*, 19.

<sup>149</sup> Lewis, *One of Our H-Bombs is Missing*, 8.

<sup>150</sup> Lewis, *One of Our H-Bombs is Missing*, 5.

<sup>151</sup> Lewis, *One of Our H-Bombs is Missing*, 6.

<sup>152</sup> Lewis, *One of Our H-Bombs is Missing*, 6.

<sup>153</sup> Szulc, *The Bombs of Palomares*, 18.

<sup>154</sup> Lewis, *One of Our H-Bombs is Missing*, 8.

<sup>155</sup> Szulc, *The Bombs of Palomares*, 21.

Texas) from the joint U.S.-Spanish Air Force base at Morón, near Sevilla.<sup>156</sup> Both planes were required to fly between 450 and 500 mph during refueling at 31,000 feet and they had less than 10 minutes to rendezvous according to plan.<sup>157</sup> The KC-135 was flown by Major Emil Chapla, a veteran bomber pilot, who had flown in World War II and Korea.<sup>158</sup> Master Sergeant Lloyd Potolicchio was the boom operator on the tanker and was required to lay on his belly in its tail and control the boom that would deliver fuel to the B-52 bomber.<sup>159</sup> He was effectively in charge while the air refueling was taking place.<sup>160</sup> Master Sergeant Potolicchio had been a bomber gunner during World War II and Korea and had since become an air refueling specialist for SAC.<sup>161</sup>

The U.S. military had been utilizing aerial refueling for nearly fifty years prior to the Palomares accident, and it was considered to be a fairly routine operation.<sup>162</sup> Aerial refueling of nuclear-armed bombers had been occurring over Spain for thirteen years.<sup>163</sup> The crews of both planes had done this type of refueling mission hundreds of times, but alertness and precision were still necessary.<sup>164</sup> The boom nozzle had to lock into place in the fuel opening below the cockpit of the B-52 to complete the transfer.<sup>165</sup>

“Tea-16, Tea-16. Watch your enclosure,” Master Sergeant Potolicchio called over his radio in a normal, unworried tone of voice.<sup>166</sup> He had meant that the bomber

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<sup>156</sup> “U.S. Said to Hunt Lost Atom Device,” *New York Times*, January 19, 1966, p. 1; Lewis, *One of Our H-Bombs is Missing*, 8.

<sup>157</sup> 1975 Palomares Summary Report, 13; Lewis, *One of Our H-Bombs is Missing*, 9. In contrast, Tad Szulc states that the aerial refueling speed is 275 miles per hour. Szulc, *The Bombs of Palomares*, 29.

<sup>158</sup> Szulc, *The Bombs of Palomares*, 23-24.

<sup>159</sup> Lewis, *One of Our H-Bombs is Missing*, 9.

<sup>160</sup> Lewis, *One of Our H-Bombs is Missing*, 8.

<sup>161</sup> Szulc, *The Bombs of Palomares*, 24.

<sup>162</sup> For a chronological history of aerial refueling, see *Seventy Years of Strategic Air Refueling 1918-1988: A Chronology* (Office of the Historian, Headquarters Strategic Air Command, Offutt Air Force Base, Nebraska, May 1990).

<sup>163</sup> Szulc, *The Bombs of Palomares*, 23.

<sup>164</sup> Lewis, *One of Our H-Bombs is Missing*, 10.

<sup>165</sup> Lewis, *One of Our H-Bombs is Missing*, 11.

<sup>166</sup> Lewis, *One of Our H-Bombs is Missing*, 11.

was closing the distance between the two planes too quickly. Captain Wendorf, who was piloting the B-52, slowed the plane as had been requested.<sup>167</sup> However, the veteran pilot, Major Messinger, noticed from his cockpit jump seat that the bomber was traveling too fast.<sup>168</sup>

Less than a minute later there was an explosion and the sound of screeching metal as the frame of the B-52 broke apart.<sup>169</sup> The boom had missed its designated opening and instead hit the bomber's longeron, which was the spine of the plane, creating force sufficient to snap off the B-52's left wing.<sup>170</sup> Fire spread up the boom to the KC-135's tanks full of 30,103 gallons of kerosene jet fuel.<sup>171</sup> While the B-52 broke up in midair, the tanker plummeted to Earth largely intact and exploded just prior to ground contact at 1600 feet, killing all four tanker crew members, Master Sergeant Potolicchio, Major Chapla, Captain Paul R. Lane, and Captain Leo E. Simmons.<sup>172</sup>

Although the bomber crew had never prepared for this particular event, they had been trained to instinctively react in an emergency.<sup>173</sup> Captain Wendorf pulled his emergency handle which ejected his pilot's chair out of the cockpit and likely set off the bailout alarm in the rest of the plane.<sup>174</sup> Major Messinger, Captain Ivans Buchanan, and First Lieutenant Steven S. Montanus also ejected successfully from the plane, although Buchanan had to pull his chute out of its packaging by hand as he fell to Earth and for some unknown reason Montanus' chute never opened at all.<sup>175</sup> First Lieutenant George J.

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<sup>167</sup> The radio chatter coming from Master Sergeant Potolicchio is stated to be much different in Tad Szulc's book, *The Bombs of Palomares*. According to Szulc, Potolicchio called out in alarm, "Hey, watch it, you're coming in too fast!" Szulc, *The Bombs of Palomares*, 29.

<sup>168</sup> Szulc, *The Bombs of Palomares*, 29.

<sup>169</sup> Lewis, *One of Our H-Bombs is Missing*, 11.

<sup>170</sup> 1975 Palomares Summary Report, 44; Lewis, *One of Our H-Bombs is Missing*, 11-12.

<sup>171</sup> Szulc, *The Bombs of Palomares*, 23.

<sup>172</sup> 1975 Palomares Summary Report, 19; Maydew, *America's Lost H-Bomb!*, 19; Lewis, *One of Our H-Bombs is Missing*, 12.

<sup>173</sup> Lewis, *One of Our H-Bombs is Missing*, 12.

<sup>174</sup> Lewis, *One of Our H-Bombs is Missing*, 11.

<sup>175</sup> Lewis, *One of Our H-Bombs is Missing*, 12.



Glessner and Technical Sergeant Ronald P. Snyder never made it out of the plane.<sup>176</sup> First Lieutenant Rooney was wearing a parachute, but was not strapped into an ejection seat because the plane only had six of them.<sup>177</sup> After being bounced about inside the plane for a few terrifying moments, he was able to make his way out of the hole that the navigators' ejection seats had left in the plane as he had learned in his training.<sup>178</sup>

Both planes, worth approximately \$11 million and weighing nearly 250 tons, fell onto a square of land and sea approximately 10 miles along each side.<sup>179</sup> The hydrogen bombs were jettisoned from the plane when the bomb rack they were attached to inside the plane broke.<sup>180</sup> If they had been armed and detonated on impact, each with the equivalent explosive power of 1,500,000 tons of TNT, they would have destroyed much of southeastern Spain.<sup>181</sup>

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<sup>176</sup> Lewis, *One of Our H-Bombs is Missing*, 13.

<sup>177</sup> Lewis, *One of Our H-Bombs is Missing*, 13.

<sup>178</sup> Lewis, *One of Our H-Bombs is Missing*, 13.

<sup>179</sup> 1975 Palomares Summary Report, 75; Lewis, *One of Our H-Bombs is Missing*, 15.

<sup>180</sup> Lewis, *One of Our H-Bombs is Missing*, 15.

<sup>181</sup> Kaplan, *Wizards of Armageddon*, 77; Lewis, *One of Our H-Bombs is Missing*, 15.

## THE BOMBING

Palomares, which means “dovecotes” in Spanish,<sup>182</sup> was not listed on most maps.<sup>183</sup> SAC maps called this part of Spain the Saddle Rock Refueling Area, but they did not name Palomares specifically.<sup>184</sup> It was a convenient location for aerial refueling because the weather was generally clear, there were no large population centers, and bombers were not required to deviate from their course between the mission failsafe in the Mediterranean and the United States.<sup>185</sup> The Spanish national census did not count individuals living in villages as small as Palomares, however a reasonable estimate in 1966 would be about 756 adults, and with children around 2000 people.<sup>186</sup>

In Almería, the impoverished province where Palomares exists, rain is a precious commodity.<sup>187</sup> The last measurable rain had occurred on October 18 of the preceding year when 15 liters per square meter had fallen on Palomares.<sup>188</sup> The last rain of any of value to farming came in January 1964, when 41.5 liters per square meter fell on the village.<sup>189</sup> The farmers of Palomares had dug 100 deep wells in order to sustain agriculture.<sup>190</sup> Tomatoes do not require as much water as other crops, and they brought Palomares nearly \$250,000 in 1965, which was quite good for southeastern Spain.<sup>191</sup> The village also harvested alfalfa, wheat, beans and cotton.<sup>192</sup> These revenues allowed the

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<sup>182</sup> Szulc, *The Bombs of Palomares*, 36.

<sup>183</sup> Szulc, *The Bombs of Palomares*, 16.

<sup>184</sup> Report to the Joint Chiefs of Staff, dated January 19, 1966, partially declassified on January 29, 1991, located in DDRS, 1; Szulc, *The Bombs of Palomares*, 27.

<sup>185</sup> Szulc, *The Bombs of Palomares*, 27-28.

<sup>186</sup> 1975 Palomares Summary Report, 18; Szulc, *The Bombs of Palomares*, 10.

<sup>187</sup> 1975 Palomares Summary Report, 18-19.

<sup>188</sup> Szulc, *The Bombs of Palomares*, 10.

<sup>189</sup> Szulc, *The Bombs of Palomares*, 10. The bare minimum of rain for farming without irrigation is 40 liters or 10.56 gallons per square meter. Szulc, *The Bombs of Palomares*, 10.

<sup>190</sup> 1975 Palomares Summary Report, 19; Szulc, *The Bombs of Palomares*, 11.

<sup>191</sup> 1975 Palomares Summary Report, 18-19; Szulc, *The Bombs of Palomares*, 12.

<sup>192</sup> Szulc, *The Bombs of Palomares*, 12.

installation of an electric power generator in 1958 which lighted the village's houses and allowed for the use of radios and television sets.<sup>193</sup> The captain of the Civil Guardia, Captain Isidoro Calín, estimated that Palomares was above the economic average for villages in Almería.<sup>194</sup>

Still in 1962, Palomares' annual per capita income was \$200 compared with the Spanish national figure of \$408.<sup>195</sup> At the time, Almería was 49th out of Spain's 50 provinces in per capita income.<sup>196</sup> Nationally, the contribution to Spain's Gross Domestic Product from agriculture products (Palomares' sole commodity) would decline greatly during the 1960s, from about 25 percent in 1960 to less than 13 percent in 1972.<sup>197</sup> The agricultural contribution to Spain's exports would also decline from a respectable 55 percent in 1961 to less than 30 percent in the early 1970s.<sup>198</sup>

At 10:22 a.m. on January 17, 1966 the planes and the bombs fell in and around the small village of Palomares.<sup>199</sup> The residents had often watched the daily refueling operation occur in the sky above and therefore many of them saw the midair collision.<sup>200</sup> Immense chunks of burning metal came crashing down on the village; some pieces were larger than the average Palomares house.<sup>201</sup> The main section of the bomber's landing gear crashed eighty yards away from the boys' elementary school. The teacher, José Molinero, decided to tell his 51 students, ages 6 to 11, to remain in the classroom. The same decision was made by Conchita Fernandez de Arellano, the teacher at the girls' elementary school, who likewise told her 36 students not to leave the classroom.<sup>202</sup>

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<sup>193</sup> 1975 Palomares Summary Report, 19; Szulc, *The Bombs of Palomares*, 12.

<sup>194</sup> 1975 Palomares Summary Report, 18-19; Szulc, *The Bombs of Palomares*, 13.

<sup>195</sup> Szulc, *The Bombs of Palomares*, 13.

<sup>196</sup> Szulc, *The Bombs of Palomares*, 12.

<sup>197</sup> Wolfgang Wipplinger, "Spain's Economic Progress Since 1960," in *Spain in the 1970s*, Salisbury and Theberge, 4.

<sup>198</sup> Wipplinger, "Spain's Economic Progress Since 1960," in *Spain in the 1970s*, Salisbury and Theberge, 7.

<sup>199</sup> Szulc, *The Bombs of Palomares*, 15.

<sup>200</sup> 1975 Palomares Summary Report, 19; Szulc, *The Bombs of Palomares*, 36.

<sup>201</sup> Tad Szulc, "Palomares Learns to Love the Bomb," *New York Times*, February 20, 1966, p. SM12.

<sup>202</sup> Szulc, *The Bombs of Palomares*, 38.

María Badillo was preparing lunch when her five-year-old daughter ran into the house and screamed “Mama, the sky is raining fire!”<sup>203</sup> She grabbed her daughter and two of her infants and hid behind a concrete railing until the disaster was over. One of the engines of the tanker plane buried itself in the ground behind the house of Julio Ponce Navarro and burned brightly.

A hydrogen bomb fell in front of 83-year-old Pedro de la Torre Flores, who was busy watching flaming plane debris shower down around him. When the bomb’s conventional explosives detonated upon impact, Flores was thrown to the ground along with his two young grand-nephews and had the wind knocked out of him.<sup>204</sup> Another bomb landed in the Cabezo Negro Hills on the other side of Palomares and suffered a conventional detonation.<sup>205</sup> Both explosions were followed by a black-brown cloud of dust-like particles drifting into the air.<sup>206</sup>

Amazingly, no one was hurt as the planes and the bombs fell on Palomares. The Catholic priest in charge of the village, Father Francisco Navarete Serrano, would later state that “the hand of God” had saved the village and its people from destruction.<sup>207</sup> Luckily, the jet fuel in the tanker plane and that remaining in the bomber’s tanks had largely evaporated in the air during the collision, because otherwise the danger to Palomares would have been much greater.<sup>208</sup>

Francisco Simó Orts was the captain of a fishing boat, the *Manuela Orts*, that was sailing five miles offshore at the time of the accident.<sup>209</sup> He was a professional fisherman who had been working at sea for twenty-seven years.<sup>210</sup> Orts saw the fireball in the sky and then watched six parachutes descend to Earth. Two of the parachutes landed very

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<sup>203</sup> Szulc, *The Bombs of Palomares*, 37.

<sup>204</sup> Szulc, *The Bombs of Palomares*, 39.

<sup>205</sup> Szulc, *The Bombs of Palomares*, 38.

<sup>206</sup> Szulc, *The Bombs of Palomares*, 38-39.

<sup>207</sup> 1975 Palomares Summary Report, 19; Szulc, *The Bombs of Palomares*, 37-38.

<sup>208</sup> Szulc, *The Bombs of Palomares*, 38.

<sup>209</sup> Szulc, *The Bombs of Palomares*, 27.

<sup>210</sup> Szulc, *The Bombs of Palomares*, 35.

close to his boat. Orts would later report, “From one of the parachutes hung something that looked to me like a half-man and on the other parachute a dead weight that looked like a man.”<sup>211</sup> Orts navigated mainly by sighting familiar points on the shore, and he estimated that the two parachutes had landed approximately five and a half miles from the beach.<sup>212</sup> He made a mark on his depth-sounding chart to mark the location. The bombs that fell near Palomares were each equipped with two parachutes, one that was meant to stabilize the bomb before it exploded in the event of an intentional release and one that was meant to bring the bomb down safely in the event of an accident.<sup>213</sup> Orts did not know this at the time, but the “dead man” suspended from a parachute that landed near his boat was actually a ten-foot hydrogen bomb.<sup>214</sup>

As the accident was occurring, a Spanish Navy helicopter was flying from the naval base of Santa Ana de Cartagena to the joint U.S.-Spanish nuclear submarine base at Rota.<sup>215</sup> The helicopter pilots, Emilio Erades and José Antonio Balbas, also watched a number of parachutes fall into the sea. The pilots radioed to the Spanish Air Force Base and the commander there contacted the fishing port of Aguilas to send out additional ships to look for survivors.<sup>216</sup> The helicopter spotted a man on a rubber raft, and then flew back to lead Orts’ fishing boat to the raft. The helicopter, already dangerously low on fuel, then swung back again to lead the fishing boat *Dorita*, captained by Captain Bartolomé Roldán, to two more rafts that were bobbing in the sea.<sup>217</sup> The three survivors that had drifted out to sea were all rescued just thirty minutes after they had landed in the water.<sup>218</sup> Captain Wendorf was unconscious until he hit the water and his arm seemed to be broken, Lieutenant Rooney had a deep gash on his lower back, and Major Messinger

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<sup>211</sup> Szulc, *The Bombs of Palomares*, 35.

<sup>212</sup> Szulc, *The Bombs of Palomares*, 35.

<sup>213</sup> Szulc, *The Bombs of Palomares*, 81-82.

<sup>214</sup> Maydew, *America’s Lost H-Bomb!*, 57.

<sup>215</sup> Szulc, *The Bombs of Palomares*, 27.

<sup>216</sup> Szulc, *The Bombs of Palomares*, 41-42.

<sup>217</sup> 1975 Palomares Summary Report, 16.

<sup>218</sup> Szulc, *The Bombs of Palomares*, 42.

had no apparent injuries.<sup>219</sup> The rescued crewmen were taken to a local hospital in the 15,000 person fishing town of Aguilas, where the fishermen all lived.<sup>220</sup> The helicopter pilots landed their craft on the beach near Palomares with only 2 gallons of fuel in its tanks.<sup>221</sup> Major Buchanan, the fourth and final survivor, was later found alive on the ground near Palomares still strapped into his ejection seat, with a broken shoulder and burns that he suffered during his harrowing fall to Earth.<sup>222</sup>

Of course, the residents of Palomares were unaware that the bomber had carried nuclear bombs and their main concern on that morning was helping any possible survivors of the crash. As one resident stated, “We wanted to save those poor *Americanos*.”<sup>223</sup> Five of the dead crewmen landed in the village cemetery, including all of the men from the tanker plane.<sup>224</sup> Another dead crewman was found 100 yards away from the cemetery still strapped into his ejection seat.<sup>225</sup> His parachute either didn’t open or burned in the air. Baltasar Flores, the Palomares resident who found him, said that the dead man had “all the horrors of the world mirrored in his face.”<sup>226</sup> They found another dead airman a few more steps uphill. It is somewhat mysterious that all seven dead crewmen were found within a stone’s throw of the Palomares cemetery, especially considering that the wreckage from both planes was strewn over a 16-square mile area.<sup>227</sup> The sympathetic people of Palomares would incorrectly prepare eight coffins for the seven severely burned bodies, which would cause some minor bureaucratic issues when General Wilson would attempt to claim them on the next day.<sup>228</sup>

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<sup>219</sup> Szulc, *The Bombs of Palomares*, 42-43.

<sup>220</sup> Szulc, *The Bombs of Palomares*, 71.

<sup>221</sup> Szulc, *The Bombs of Palomares*, 43-44.

<sup>222</sup> Maydew, *America’s Lost H-Bomb!*, 7; Szulc, *The Bombs of Palomares*, 53, 72.

<sup>223</sup> Szulc, *The Bombs of Palomares*, 45.

<sup>224</sup> Szulc, *The Bombs of Palomares*, 45-46.

<sup>225</sup> Szulc, *The Bombs of Palomares*, 46.

<sup>226</sup> Szulc, *The Bombs of Palomares*, 46.

<sup>227</sup> Szulc, *The Bombs of Palomares*, 46-47.

<sup>228</sup> Szulc, *The Bombs of Palomares*, 70-71.

José López Flores, the nephew of the eighty-three year old man who had been knocked to the ground by the bomb blast, tried to put out the fires that were burning by the bomb.<sup>229</sup> After moving the attached parachute, he realized that there was a cracked bomb underneath and began stamping out the fire with his feet in order to prevent another explosion.<sup>230</sup> He would later say that he may have actually kicked the hydrogen bomb, which may make him the only person in history to have ever made such a claim.<sup>231</sup> His wife, Luisa, came out of the house and shouted at him, “What in the name of God are you doing, Pepé? Get away from there! This could be dangerous.”<sup>232</sup> Another bomb was found by Alfonso Flores Serrano on the other side of Palomares. He also noticed that the bomb cylinder was cracked open, but he left the bomb alone.<sup>233</sup>

A hydrogen bomb is an interesting mix of ingredients. It contains conventional explosives (much like TNT), a small melon-shaped core of plutonium, a much larger log of uranium, and a small amount of heavy hydrogen atoms (deuterium or tritium).<sup>234</sup> In order for the bomb to work the conventional explosives must detonate in a precise manner in order to produce the necessary fission of the plutonium and uranium, and thereafter the powerful fusion of the heavy hydrogen atoms, that causes a thermonuclear explosion.<sup>235</sup> In theory, the bombs could not be armed without the bomber crew flipping two different switches inside the plane that would cause the necessary circuits to be closed inside the bomb.<sup>236</sup> When an unarmed nuclear bomb falls to Earth the conventional explosives may still detonate in an imprecise fashion.<sup>237</sup> Although the

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<sup>229</sup> Szulc, *The Bombs of Palomares*, 48.

<sup>230</sup> Szulc, *The Bombs of Palomares*, 48.

<sup>231</sup> Szulc, *The Bombs of Palomares*, 48.

<sup>232</sup> Szulc, *The Bombs of Palomares*, 49.

<sup>233</sup> Szulc, *The Bombs of Palomares*, 47.

<sup>234</sup> John W. Finney, “U.S. Concedes Loss of H-Bomb in Spain,” *New York Times*, March 2, 1966, p. 1; Lewis, *One of Our H-Bombs is Missing*, 86.

<sup>235</sup> Lewis, *One of Our H-Bombs is Missing*, 86.

<sup>236</sup> John W. Finney, “U.S. Concedes Loss of H-Bomb in Spain,” *New York Times*, March 2, 1966, p. 1; Sagan, *The Limits of Safety*, 185.

<sup>237</sup> Lewis, *One of Our H-Bombs is Missing*, 86.

uranium log would be largely unaffected and the hydrogen atoms would simply dissipate, the plutonium (Pu-239) would spray out from the bomb in a fine radioactive powder.<sup>238</sup> None of the bombs that fell at Palomares had suffered a nuclear explosion.<sup>239</sup> However, two of the bombs, the one that fell into the tomato field and the one that landed in the cemetery, had their conventional explosives detonate on impact and spread radioactive plutonium dust around the surrounding area.<sup>240</sup>

Although the most dangerous radiation, such as beta and gamma rays, would only be released in the event of an actual nuclear explosion, plutonium dust does emit alpha radiation. Alpha radiation cannot pierce human skin under most circumstances, however it can be ingested or inhaled into the body. Although plutonium dust can be internalized by eating contaminated food, most of it would pass through the person's digestive tract. It is more dangerous however when plutonium dust is inhaled, because much of it will eventually become permanently lodged in the person's skeleton. In large enough amounts (three-fifths of one millionth part of a gram), this can cause radiation sickness in the short term or cancer in the long term.<sup>241</sup> At the time of the accident, plutonium had only been in existence for twenty-two years, and not much was known of the actual long term effects of plutonium exposure. Since the side effects of plutonium poisoning was the same as that of radium, scientists believed that there could be as long as a thirty-year delay between exposure and illness.<sup>242</sup>

The people of Palomares were lucky. It was quite windy on the day of the accident, and the breeze carried the toxic plutonium dust away from the village.<sup>243</sup> The bomb that had exploded near the cemetery was not located near houses, while the bomb that had exploded in the tomato field had only half of its conventional explosives

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<sup>238</sup> Lewis, *One of Our H-Bombs is Missing*, 86-87

<sup>239</sup> 1975 Palomares Summary Report, 20.

<sup>240</sup> Szulc, *The Bombs of Palomares*, 89.

<sup>241</sup> Szulc, *The Bombs of Palomares*, 91.

<sup>242</sup> Szulc, *The Bombs of Palomares*, 91.

<sup>243</sup> Szulc, *The Bombs of Palomares*, 97.



detonate.<sup>244</sup> Also, the emergency parachutes on the two bombs had either burned in the air or failed to work properly. Therefore, the bombs fell at high velocity and buried themselves in the ground before detonation, creating smaller plutonium clouds than otherwise may have occurred.<sup>245</sup> Dr. Wright H. Langham of the Atomic Energy Commission (AEC), an expert on plutonium hazards and a lead supervisor in the cleanup operation, stated that if the tomato patch bomb had “impacted and detonated at low velocity with a gentle breeze blowing directly toward the village, the drama of Palomares might have been decidedly more grim.”<sup>246</sup> However, plutonium fallout was still measurable over a mile away from the bomb craters.<sup>247</sup>

No one in Palomares suffered radiation poisoning after the accident and tests on urine samples of the townspeople indicated that only low levels of plutonium dust had been internalized.<sup>248</sup> Captain Calín of the Civil Guardia wisely ordered his officers to keep the residents of Palomares away from the plane debris and burning fires shortly after the accident, and later the Guardia would patrol the surrounding area to keep out unauthorized persons.<sup>249</sup> On the day after the accident, the Air Force Director of Nuclear Safety would report from the scene to the U.S. Department of State (perhaps prematurely) that the “impact on populace [is] practically nil.”<sup>250</sup> On the fourth day after the accident, residents who had been in the fields at the time of the crash were told that they would need to be tested for radioactivity.<sup>251</sup> In the two weeks following the

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<sup>244</sup> Szulc, *The Bombs of Palomares*, 98.

<sup>245</sup> Szulc, *The Bombs of Palomares*, 98-99.

<sup>246</sup> Szulc, *The Bombs of Palomares*, 100.

<sup>247</sup> Szulc, *The Bombs of Palomares*, 99.

<sup>248</sup> 1975 Palomares Summary Report, 51.

<sup>249</sup> 1975 Palomares Summary Report, 18; Memorandum from Art McCafferty to Bromley Smith, dated January 17, 1966, declassified on October 15, 1990; Szulc, *The Bombs of Palomares*, 54.

<sup>250</sup> Situation Report to the Secretary of Defense, dated January 18, 1966, partially declassified on January 29, 1991, located in DDRS, 2.

<sup>251</sup> Tad Szulc, “Palomares Learns to Love the Bomb,” *New York Times*, February 20, 1966, p. SM12.

accident, more than 1000 people had been tested by either a portable radiation counter or through tests on urine samples.<sup>252</sup>

Three minutes after the accident, the headquarters of the U.S. Sixteenth Air Force at the Torrejón learned from the radio report of the lead KC-135 tanker that “the other B-52 is on fire.”<sup>253</sup> When commanding Major General Delmar E. Wilson then learned a few minutes later that the B-52 was also “in a spin” it became immediately clear to him that an accident involving nuclear weapons was occurring over Spain.<sup>254</sup> General Wilson then called the SAC headquarters at Offutt Air Force Base near Omaha, Nebraska, woke up SAC’s Chief of Staff, Major General Donald W. Eisenhower (it was 3:35 am local time), and informed him that there was a “Broken Arrow in Spain.”<sup>255</sup> Broken Arrow is the SAC codename for a missing nuclear weapon.<sup>256</sup> Before the accident at Palomares eleven Broken Arrows had been announced publicly, but there had likely been several more.<sup>257</sup>

President Johnson was informed of the accident at 7:05 a.m. on the first morning, and called the Secretary of State and instructed him to “do everything possible” to locate the missing nuclear weapons.<sup>258</sup> Thereafter, President Johnson was generally kept informed in his morning and sometimes nightly briefings, however he seems to have permitted the military to take care of the cleanup largely without his personal involvement.<sup>259</sup> As stated in a draft report of the U.S. Department of State, “We do not know if the President issued any personal orders or directives relating to the incident. It

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<sup>252</sup> Tad Szulc, “Nuclear Accident Bewilders Spanish Farmers,” *New York Times*, January 31, 1966, p. 2.

<sup>253</sup> Szulc, *The Bombs of Palomares*, 55.

<sup>254</sup> Szulc, *The Bombs of Palomares*, 55-56.

<sup>255</sup> Szulc, *The Bombs of Palomares*, 56-57.

<sup>256</sup> 1975 Palomares Summary Report, 17; Szulc, *The Bombs of Palomares*, 57.

<sup>257</sup> Lewis, *One of Our H-Bombs is Missing*, 55.

<sup>258</sup> 1975 Palomares Summary Report, 18; Draft Report of the Department of State, dated August 10, 1966, declassified on April 12, 1989, located in DDRS, 1; Memorandum for the President by Arthur McCafferty, Briefing Officer, dated January 17, 1966, partially declassified on October 15, 1990, located in DDRS, 2.

<sup>259</sup> Memorandum for the President, dated January 18, 1966, declassified on April 12, 1989, located in DDRS; Memorandum for the President by Arthur McCafferty, Briefing Officer, dated January 18, 1966, declassified on March 13, 1991, 2; Stiles, “A Fusion Bomb over Andalucía,” 54-55.

is most likely that he talked to both Secretary of State Dean Rusk and Secretary of Defense Robert McNamara by telephone and in person, but our records do not indicate when he did so.”<sup>260</sup>

Several disaster control teams were sent immediately to Spain, including SAC’s main team under Major General A. J. Beck from Offutt, a group from the AEC from Albuquerque, New Mexico, an additional SAC team from Wiesbaden, Germany, and General Wilson’s team from Torrejón.<sup>261</sup> Although SAC had run many tests over the years simulating nuclear accidents, the Palomares incident had certain unique aspects that made cleanup and recovery operations particularly daunting.<sup>262</sup> Previous Nevada test programs, such as Project 57 in 1957 and Operation Roller Coaster in 1963, had simulated the accidental non-nuclear detonation of plutonium and attempted to determine the likelihood that unarmed weapons could produce nuclear reactions unintentionally.<sup>263</sup> However, unlike in those tests, Palomares was far from any U.S. military base, was located in a foreign country, and its civilians may have been exposed to deadly radiation.<sup>264</sup> Also, the missing bombs could have fallen anywhere in an area of several square miles of rough, uneven land or in the Mediterranean Sea, with a bottom that was thousands of feet deep and equally uneven.<sup>265</sup>

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<sup>260</sup> Draft Report of the Department of State, dated August 10, 1966, declassified on April 12, 1989, located in DDRS, 2.

<sup>261</sup> Situation Report to the Secretary of Defense, dated January 18, 1966, partially declassified on January 29, 1991, located in DDRS, 1-2; Szulc, *The Bombs of Palomares*, 57, 66.

<sup>262</sup> Szulc, *The Bombs of Palomares*, 64.

<sup>263</sup> Szulc, *The Bombs of Palomares*, 95.

<sup>264</sup> Szulc, *The Bombs of Palomares*, 64.

<sup>265</sup> Szulc, *The Bombs of Palomares*, 81.

## THE INVASION

The Americans set up camp near where the B-52's tail section had landed in the Almanzora dry river bed.<sup>266</sup> The camp itself, known as Camp Wilson after commanding General Wilson, became a large operation and by two weeks after the accident over 750 people (including Spaniards) were working there looking for missing plane parts, testing for radioactivity and searching for hydrogen bombs.<sup>267</sup>

At around 4 p.m. on the day of the accident, two Spanish Guardias on patrol found one of the missing hydrogen bombs still attached to its parachute on the beach a few hundred feet from Camp Wilson.<sup>268</sup> They alerted the U.S. soldiers at the camp who then defused the dented, but otherwise undamaged, bomb (named "Weapon #1").<sup>269</sup> At 9:30 a.m. the next day, the second hydrogen bomb was found near the Palomares cemetery by a search helicopter (named "Weapon #2").<sup>270</sup> One hour later, a search party airman found the third bomb in the tomato field by Pepé López's house (named "Weapon #3").<sup>271</sup> The conventional explosions of Weapon #2 and Weapon #3 were significant: Weapon #2 had left a crater twenty feet in diameter and six feet deep, and one fragment of Weapon #3 was found 1500 feet away.<sup>272</sup> The Combat Mission Folder marked Top Secret was also found on the day after the accident and appeared to be untouched.<sup>273</sup> Therefore, three of the four missing hydrogen bombs were found within twenty-four hours of the accident. However, finding the fourth bomb would pose a much greater challenge.

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<sup>266</sup> Szulc, *The Bombs of Palomares*, 70-71.

<sup>267</sup> 1975 Palomares Summary Report, 18, 28.

<sup>268</sup> 1975 Palomares Summary Report, 20; Szulc, *The Bombs of Palomares*, 73-74.

<sup>269</sup> Cable from Department of Air Force, dated January 21, 1966, partially declassified on October 28, 1996, located in DDRS, 2; Szulc, *The Bombs of Palomares*, 73-74.

<sup>270</sup> 1975 Palomares Summary Report, 20; Szulc, *The Bombs of Palomares*, 87.

<sup>271</sup> 1975 Palomares Summary Report, 20; Special Situation Report for the White House, dated January 19, 1966, declassified on January 29, 1991, located in DDRS; Szulc, *The Bombs of Palomares*, 87-88.

<sup>272</sup> 1975 Palomares Summary Report, 20, 44.

<sup>273</sup> Lewis, *One of Our H-Bombs is Missing*, 91.

Shortly after arriving in Almería, General Wilson visited the injured crewman who had been rescued from the Mediterranean and taken to the Central Hospital in Aquilas.<sup>274</sup> He questioned Captain Wendorf, Major Messinger and Lieutenant Rooney about the incident, and all three agreed that they did not know of any malfunction in the B-52 prior to the accident. However, Major Messinger believed that the B-52's closure rate with the tanker was "excessive."<sup>275</sup> General Wilson believed that the collision may have been due to pilot error, but the Aircraft Accident Investigation Board (the "Board") would need to make the final determination.<sup>276</sup> The Board issued its report by February 8, after interviewing Spanish witnesses and examining the wreckage shortly after the accident.<sup>277</sup>

Surveying for plutonium contamination was backbreaking work. The only alpha radiation detectors of the time (the PAC-1S counters) required the surveyor to hold the detector very close to the ground or around 3 to 4 cm from the source.<sup>278</sup> Initially, personnel working to recover weapons in the craters wore gas masks, however all later U.S. decontamination personnel wore surgical masks in addition to gloves, coveralls and surgical hats and were routinely screened for radioactivity (no such precautions were taken with regard to the Civil Guardias patrolling the contamination areas).<sup>279</sup> As the Air Force's 1975 Palomares Summary Report (the "1975 Palomares Summary Report") stated:

It is doubtful that the use of the surgical mask served more than a psychological barrier to plutonium inhalation. These masks were not designed as filters for micron particulates nor do they fit to the face without leakage... It is significant in this regard that air sampling

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<sup>274</sup> Szulc, *The Bombs of Palomares*, 71.

<sup>275</sup> Szulc, *The Bombs of Palomares*, 71-72.

<sup>276</sup> Szulc, *The Bombs of Palomares*, 71-72.

<sup>277</sup> 1975 Palomares Summary Report, 43-44.

<sup>278</sup> 1975 Palomares Summary Report, 38, 50.

<sup>279</sup> 1975 Palomares Summary Report, 50-51; May, *The Greenpeace Book of the Nuclear Age*, 149.

indicated a negligible resuspension problem. Had it been otherwise, it is probable that larger body burdens would have been registered.<sup>280</sup>

Plutonium continued to be resuspended in the air due to the wind and other disturbances, which caused difficulties in determining the exact extent of the contamination.<sup>281</sup> The southwest area of Spain where Palomares is located also favors resuspension of plutonium particles due the zone's low rainfall and high dust content.<sup>282</sup> Near the areas where the two bombs had suffered conventional explosions, 2 million alpha radiation emission counts per minute (CPM) were recorded (the maximum measurable by the PAC-1S radiation counters on site).<sup>283</sup> Plutonium contamination up to 7000 CPM was found in areas that extended nearly 4000 feet from the Weapon #2 and 4500 feet from Weapon #3.<sup>284</sup> On January 30 and 31, a zero contamination line was formed by placing red flags around the 630-acre area in Palomares that had suffered plutonium fallout (650 acres after winds occurred).<sup>285</sup>

There were no U.S. criteria for permissible levels of plutonium contamination in accident situations, only for permissible levels in processing plants and laboratories and the guidelines established from the previous Nevada tests.<sup>286</sup> Dr. Langham and others from the AEC recommended that all soil measuring 100,000 CPM or above be removed to a depth of 5-6 cm and that areas with counts from 7000 CPM to 100,000 CPM be plowed.<sup>287</sup> The Spanish nuclear energy commission (JEN) agreed on the cleanup methods, but disagreed on the applicable CPM levels.<sup>288</sup> Instead they proposed that the United States haul away topsoil registering above 7000 CPM, which would entail

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<sup>280</sup> 1975 Palomares Summary Report, 51.

<sup>281</sup> 1975 Palomares Summary Report, 50.

<sup>282</sup> Iranzo, Espinosa and Martinez, "Resuspension in the Palomares Area of Spain," 833.

<sup>283</sup> 1975 Palomares Summary Report, 49; Maydew, *America's Lost H-Bomb!*, 31; Szulc, *The Bombs of Palomares*, 90.

<sup>284</sup> 1975 Palomares Summary Report, 49-50.

<sup>285</sup> 1975 Palomares Summary Report, 50, 64.

<sup>286</sup> 1975 Palomares Summary Report, 53.

<sup>287</sup> 1975 Palomares Summary Report, 53.

<sup>288</sup> 1975 Palomares Summary Report, 53.

removing soil from over 100 acres and plowing a square mile of less contaminated land.<sup>289</sup> The United States was hesitant to accept such levels, because such stringent requirements might be used as precedent by others in a future nuclear accident.<sup>290</sup> The final negotiations with the Spanish government ended with a February 17<sup>th</sup> agreement that soil registering 60,000 CPM (1088 cubic yards from 5 ½ acres) would be removed and replaced with fresh topsoil.<sup>291</sup> An additional 604 acres were to be treated either by removing the soil or by plowing.<sup>292</sup> Vegetation and crops that measured 400 CPM and above was removed along with the soil to be buried, while vegetation measuring under 400 CPM was burned (3970 truckloads of vegetation were burned at 4 cubic yards per truck).<sup>293</sup> Later, it would be learned that burning the vegetation was probably a mistake that only served to disperse plutonium particles further.<sup>294</sup>

The cleanup was grueling work as soldiers used machetes to harvest tomatoes and other crops so that they could be removed for burial or burning.<sup>295</sup> The ground was sprayed by 16 Air Force fire trucks with 125,000 gallons of water daily to help prevent resuspension of plutonium particles, while soldiers raked and scraped the soil by hand, before it was then turned over by bulldozers.<sup>296</sup>

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<sup>289</sup> Duke, "Telegram from the Embassy in Spain to the Department of State," Madrid, February 21, 1966 in *FRUS*, vol. 12, 393 fn. 4.

<sup>290</sup> 1975 Palomares Summary Report, 56.

<sup>291</sup> 1975 Palomares Summary Report, 64, 73; Duke, "Telegram from the Embassy in Spain to the Department of State," Madrid, February 21, 1966 in *FRUS*, vol. 12, 383; Lewis, *One of Our H-Bombs is Missing*, 393.

<sup>292</sup> 1975 Palomares Summary Report, 64; Lewis, *One of Our H-Bombs is Missing*, 393.

<sup>293</sup> 1975 Palomares Summary Report, 54-56; Maydew, *America's Lost H-Bomb!*, 75.

<sup>294</sup> Woolls, Daniel. "The World; 1966 Hydrogen-Bomb Mishap in Spain Detailed; Four Nuclear Weapons Fell on a Populated Area After Planes Collided; Incident is Explored in Photo Exhibition," *Los Angeles Times*, August 24, 2003, p. A.14. For more information on current techniques to manage accidental radioactive contamination see Rick C. Jones, "A United States Perspective on Long-Term Management of Areas Contaminated with Radioactive Materials," *Radiation Protection Dosimetry* 109, no. 1-2 (2004): 75-77.

<sup>295</sup> 1975 Palomares Summary Report, 60.

<sup>296</sup> Tad Szulc, "H-Bomb Cleanup in Spain a Big Task," *New York Times*, April 3, 1966, p. 1.

The goal of U.S. authorities was to return Palomares to the same state it was in before the accident.<sup>297</sup> By April 1, all of the land in the contamination area was placed in a uniform, level condition that met with the owners' approval.<sup>298</sup> Also, all damaged irrigation ditches, bridges and fences were replaced or repaired as necessary.<sup>299</sup> Each land owner was then presented with a Certification of Decontamination that was signed by U.S. Air Force and JEN representatives (a total of 856 of these were made).<sup>300</sup>

The cleanup which had proceeded during the negotiations with the Spanish over acceptable CPM levels took eight weeks.<sup>301</sup> The Spanish indicated that they would allow contaminated soil to be buried in Spain, however the United States believed that they would then have to control such a burial area until the radioactivity was no longer a problem.<sup>302</sup> Considering that plutonium has a half-life of 24,360 years, that would have meant that the United States would have had to maintain an area in Spain for over 125,000 years.<sup>303</sup> Also, both governments were concerned about leaving a "monument" to the accident in Spain.<sup>304</sup> Instead the military decided to ship the contaminated soil back to the United States where it was buried at the AEC's Savannah River Facility in Aiken, South Carolina, an 80-acre burial ground for low-level radioactive waste.<sup>305</sup> From March 11 to March 24, soldiers used shovels to fill 55-gallon oil drums with radioactive soil on the beach near Palomares so that they could be transferred to the USNS Boyce.<sup>306</sup>

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<sup>297</sup> 1975 Palomares Summary Report, 73.

<sup>298</sup> 1975 Palomares Summary Report, 73.

<sup>299</sup> 1975 Palomares Summary Report, 73.

<sup>300</sup> 1975 Palomares Summary Report, 73.

<sup>301</sup> Lewis, *One of Our H-Bombs is Missing*, 119.

<sup>302</sup> Lewis, *One of Our H-Bombs is Missing*, 121.

<sup>303</sup> Lewis, *One of Our H-Bombs is Missing*, 121.

<sup>304</sup> 1975 Palomares Summary Report, 54.

<sup>305</sup> 1975 Palomares Summary Report, 66-68; Telegram from Ambassador Duke to Department of State, dated March 18, 1966, declassified on August 15, 1988, located in DDRS, 1; Lewis, *One of Our H-Bombs is Missing*, 123-24, 239.

<sup>306</sup> 1975 Palomares Summary Report, 70; "Air Force Ends Clean-Up of Area of H-Bombs in Spain," *New York Times*, March 24, 1966, p. 12.



On April 5, 1966, the USNS Boyce arrived at port in South Carolina with its cargo of 4810 steel oil drums full of radioactive Spanish soil weighing 1400 tons.<sup>307</sup> There were no radioactivity warning labels placed on the containers until after they arrived in the United States because of the desire to minimize public attention to the shipment.<sup>308</sup>

As the frustrating search for the fourth weapon continued on land, soldier morale was kept up by handing out reward emblems and creating unit banners and nicknames.<sup>309</sup> General Wilson initiated the formation of an analysis group to examine all available data to determine the likely location of the fourth bomb.<sup>310</sup> Tragedy struck again on February 12, 1966 when a Military Airlift Command C-124 plane heading to Camp Wilson loaded with supplies for the search effort crashed near Granada, Spain, killing all eight crewmen on board.<sup>311</sup> On March 3, General Wilson recommended that the land search be abandoned since all areas had been searched to the extent possible, including the survey of numerous wells and abandoned mine shafts.<sup>312</sup> The two highest probability areas (one four-square miles and the other two-square miles) had been searched by teams walking in “finger-tip to finger-tip” formation an average of five times.<sup>313</sup> The decision to suspend the land search was made official on March 18 after the submarine, *Alvin*, found a object thought to be the fourth bomb covered by its parachute.<sup>314</sup> Personnel at Camp Wilson would continuously diminish after this point until the camp’s closure on April 7, 1966.<sup>315</sup>

In late February, the Spanish JEN proposed that U.S. and Spanish experts cooperate in a long-range follow-up program to determine the potential hazards from

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<sup>307</sup> 1975 Palomares Summary Report, 28; Narducci, *Strategic Air Command and the Alert Program*, 15.

<sup>308</sup> 1975 Palomares Summary Report, 66.

<sup>309</sup> 1975 Palomares Summary Report, 35.

<sup>310</sup> 1975 Palomares Summary Report, 46.

<sup>311</sup> 1975 Palomares Summary Report, 42; “The News of the Week in Review,” *New York Times*, April 10, 1966, p. 145.

<sup>312</sup> 1975 Palomares Summary Report, 46-47.

<sup>313</sup> 1975 Palomares Summary Report, 47.

<sup>314</sup> 1975 Palomares Summary Report, 48.

<sup>315</sup> 1975 Palomares Summary Report, 28.

plutonium contamination in Palomares.<sup>316</sup> This program was financed by \$100,000 from the United States in its first year, and through 1985 the United States was still providing consultants and about \$200,000 per year for radioactive monitoring of the Palomares area.<sup>317</sup> On July 22, 1968, the president of JEN, Professor Otero Navascues, stated that radiation readings of the Palomares area indicated that “there is not the slightest risk as far as contamination is concerned, and no abnormality has been discovered in the zone.”<sup>318</sup> In 1985, Dr. Francisco Mingot, director of JEN’s Institute of Radiobiological and Environmental Protection, told Palomares residents that there was no health hazard and that “we have detected plutonium in ten per cent of the population but these are well below danger levels.”<sup>319</sup> However, Dr. Eduardo Rodriguez Farre of the Board of Scientific Research in Barcelona disagreed stating that “medical examinations have been insufficient because they do not include chromosome testing; that the population should have been evacuated after the accident; and that the area of contamination was greater than admitted.”<sup>320</sup> During the 1990s, traces of plutonium from the accident were discovered in sediments at the mouth of the Almanzora dry river bed and in marine algae.<sup>321</sup> Palomares continues to interest scientists who wish to undertake radioactivity studies since it is one of the only populated areas of the world ever to have suffered plutonium contamination.<sup>322</sup>

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<sup>316</sup> Telegram from Ambassador Duke to Department of State, dated February 25, 1966, declassified on August 15, 1988, located in DDRS, 1-2; May, *The Greenpeace Book of the Nuclear Age*, 151-53.

<sup>317</sup> Edward Schumacher, “Where H-Bombs Fell, Spaniards Still Worry,” *New York Times*, December 28, 1985, p. 2.

<sup>318</sup> “Palomares is Found Contamination-Free,” *New York Times*, July 22, 1968, p. 14.

<sup>319</sup> May, *The Greenpeace Book of the Nuclear Age*, 153.

<sup>320</sup> May, *The Greenpeace Book of the Nuclear Age*, 153.

<sup>321</sup> Mitchell and others, “Perturbation in the <sup>240</sup>Pu / <sup>239</sup>Pu Global Fallout Ratio,” 148.

<sup>322</sup> See Montero and Sanchez, “Plutonium Contamination from Accidental Release,” 157-65; Mitchell and others, “Perturbation in the <sup>240</sup>Pu / <sup>239</sup>Pu Global Fallout Ratio,” 147-53; Gascó, Antón and Rivas, “Man-Made Radioactivity in the Almanzora Gulch,” 301-305; Iranzo, Espinosa and Martinez, “Resuspension in the Palomares Area of Spain,” 833-41.

## THE UNDERWATER RECOVERY OPERATION

The search for the fourth missing hydrogen bomb would become the main focus of the military, the press and rest of the world, even though the problem of the radiation contamination of Palomares and its people was probably of greater concern.<sup>323</sup> As early as January 19, 1966, there was speculation that the fourth bomb was lost at sea.<sup>324</sup> However, other theories were proposed, such as that the bomb may have disintegrated at high altitude (spreading plutonium in the atmosphere) or that it had dropped without deploying its parachute and buried itself deep in the sand near Palomares.<sup>325</sup>

A fleet tug from the U.S. Naval Sixth Fleet arrived off the coast of Spain just seven hours after the accident.<sup>326</sup> However, as the fourth hydrogen bomb continued to elude land searchers, the Navy would send a much larger sea-search force, led by Rear Admiral William S. Guest, numbering thirty-four surface vessels crewed by 3425 civilian and military personnel.<sup>327</sup> Frogmen divers were used to explore areas near the coast down to a depth of 80 feet, and 125 of them successfully located and retrieved 143 pieces of wreckage from the downed planes in an area of three square miles.<sup>328</sup> For deeper dives down to 400 feet, hardhat divers were used, but beyond that depth manned submersibles such as the 51-foot *Aluminaut* and the smaller 2-man *Alvin* were necessary.<sup>329</sup>

The search for the fourth bomb was unprecedented as there had never before been a nuclear weapon lost at sea in foreign territorial waters.<sup>330</sup> Much like farmers in

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<sup>323</sup> Szulc, *The Bombs of Palomares*, 92.

<sup>324</sup> Report to the Joint Chiefs of Staff, dated January 19, 1966, partially declassified on January 29, 1991, located in DDRS, 3.

<sup>325</sup> Tad Szulc, "Palomares Learns to Love the Bomb," *New York Times*, February 20, 1966, p. SM12.

<sup>326</sup> 1975 Palomares Summary Report, 75.

<sup>327</sup> 1975 Palomares Summary Report, 75.

<sup>328</sup> 1975 Palomares Summary Report, 90, 100.

<sup>329</sup> 1975 Palomares Summary Report, 91; "U.S. Submarines to Join Hunt for Bomb," *London Times*, February 4, 1966, p. 8c; "Hunting the Bomb," *Washington Post*, January 29, 1966, p. A18; "Research Submarine Will Hunt for Lost H-Bomb: Deepest-Diving Craft Made Ready to Ship to Spain," *New York Times*, January 28, 1966, p. 6.

<sup>330</sup> 1975 Palomares Summary Report, 78.

Palomares who had been forced out of their fields by the Civil Guardia, fishermen from Villaricos, Aquilas and Garrucha were prevented by local Spanish patrol craft from entering some of their fishing grounds while the search operation continued.<sup>331</sup> A French salvage ship sailed within the search area and eventually was persuaded to leave by Spanish officials who were asked by the United States to intervene.<sup>332</sup> A more distressing security issue was the appearance of the Soviet Elint Trawler *Lotsman* which stayed further out to sea and observed the search operation for twelve days.<sup>333</sup>

Francisco Simó Orts, the fisherman who had seen the parachutes land in the Mediterranean Sea, was taken by the USS *Pinnacle* to the location he had been at near the time of the accident.<sup>334</sup> He found his position by using seaman's eye referencing known points on the shore and his location was confirmed by a Spanish pharmacist and his assistant near Garrucha who had also witnessed the parachutes landing in the sea.<sup>335</sup> This was considered to be a priority search area, along with other areas based on Air Force computer studies of the likely trajectory of the bomb and by extending the onshore debris pattern.<sup>336</sup>

On March 1, the *Alvin* discovered a 400-foot trench at a depth of 2550 feet near the location Orts had indicated that had likely been made as the bomb was dragged along the bottom by sea currents.<sup>337</sup> However, the *Alvin* had to resurface to recharge its

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<sup>331</sup> 1975 Palomares Summary Report, 19, 86.

<sup>332</sup> 1975 Palomares Summary Report, 81.

<sup>333</sup> 1975 Palomares Summary Report, 86; Telegram from Embassy in Madrid to U.S. Department of State, dated January 21, 1966, partially declassified on August 15, 1988, located in DDRS, 2.

<sup>334</sup> 1975 Palomares Summary Report, 84; Telegram from Ambassador Duke, Madrid, to Department of State, dated January 22, 1966, partially declassified on August 15, 1988, located in DDRS, 2.

<sup>335</sup> 1975 Palomares Summary Report, 84.

<sup>336</sup> 1975 Palomares Summary Report, 87. It has been stated that experts ignored Orts and instead concentrated "on four possible trajectories calculated by a supercomputer." Daniel Woolls, "The World; 1966 Hydrogen-Bomb Mishap in Spain Detailed; Four Nuclear Weapons Fell on a Populated Area After Planes Collided; Incident is Explored in Photo Exhibition," *Los Angeles Times*, August 24, 2003, p. A.14. However, most evidence seems to indicate that his position finding was taken seriously, but that other areas were searched based on a variety of evidence. 1975 Palomares Summary Report, 87.

<sup>337</sup> 1975 Palomares Summary Report, 94.

batteries before it could follow the trench to its end.<sup>338</sup> After finding and then losing sight of the trench one more time twelve days later, the *Alvin* finally succeeded in locating the parachute covered bomb lying on a 70-degree slope on March 15, 1966.<sup>339</sup> The bomb was in a precarious position above a canyon that was up to 3900 feet deep, a depth which would have most likely made the weapon beyond recovery.<sup>340</sup> On March 26, the Navy attempted to bring up the bomb after attaching a line to a parachute cord, but the line snapped and the weapon was lost again.<sup>341</sup> On April 2, it was relocated by the *Alvin* at a position 120 yards away from its previous location at a depth of 2800 feet.<sup>342</sup>

On April 5, 1966, a horrifying situation emerged when the *Alvin* became tangled in the bomb's billowing parachute while attempting to navigate underwater near the bomb.<sup>343</sup> The parachute covered the portholes of the submarine, forcing the two pilots to sail her blind.<sup>344</sup> Due to the intense sea pressure at that depth, if the *Alvin* remained immobilized under the parachute there would be no way to recover the two crewmen safely.<sup>345</sup> For fifteen minutes, naval officers on the surface could do nothing but curse until they received word that the pilots had successfully sailed out from under the parachute.<sup>346</sup>

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<sup>338</sup> 1975 Palomares Summary Report, 94.

<sup>339</sup> 1975 Palomares Summary Report, 94; "H-Bomb Located in Sea off Spain," *New York Times*, March 17, 1966, p. 1; Memorandum for the President by Arthur McCafferty, Briefing Officer, dated March 17, 1966, located in DDRS, 2; Maydew, *America's Lost H-Bomb!*, 96.

<sup>340</sup> Daniel Woolls, "The World; 1966 Hydrogen-Bomb Mishap in Spain Detailed; Four Nuclear Weapons Fell on a Populated Area After Planes Collided; Incident is Explored in Photo Exhibition," *Los Angeles Times*, August 24, 2003, p. A.14; 1975 Palomares Summary Report, 119.

<sup>341</sup> 1975 Palomares Summary Report, 94.

<sup>342</sup> 1975 Palomares Summary Report, 94; Christopher Morris, *The Day They Lost the H-Bomb* (New York: Coward-McCann, 1966), 172.

<sup>343</sup> Szulc, *The Bombs of Palomares*, 254-55.

<sup>344</sup> Szulc, *The Bombs of Palomares*, 254-55.

<sup>345</sup> Szulc, *The Bombs of Palomares*, 255.

<sup>346</sup> Szulc, *The Bombs of Palomares*, 255.

After this harrowing experience, two lift lines were attached to the bomb's parachute using a Cable-controlled Underwater Recovery Vehicle (CURV), but as it attempted to attach a third line it also became entangled in the bomb's parachute.<sup>347</sup> At this point, the decision was made to lift the weapon again, and both CURV and the bomb were successfully brought up to the USS *Petrel* on April 7, 1966, a total of eighty-one days after the accident.<sup>348</sup>

On the next day, about 100 media personnel were permitted to photograph the bomb on board the USS *Petrel*.<sup>349</sup> UN Secretary General U Thant had suggested allowing the AEC to verify the recovery of the bomb, however both the United States and Spain were not willing to allow the Soviets (who were members of the AEC) access to Spanish soil and the device.<sup>350</sup> On May 6, 1966, Rear Admiral Guest was awarded the distinguished service medal for his command of the search and recovery operation.<sup>351</sup> The total cost of the underwater search and recovery of the fourth bomb was estimated to be \$10,230,744 (or \$126,305 per day).<sup>352</sup>

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<sup>347</sup> 1975 Palomares Summary Report, 119.

<sup>348</sup> 1975 Palomares Summary Report, 119; Memorandum for the President by Arthur McCafferty, Briefing Officer, dated April 7, 1966, located in DDRS, 1; Morris, *The Day They Lost the H-Bomb*, 172.

<sup>349</sup> 1975 Palomares Summary Report, 200; "H-Bomb is Recovered Intact After 80 Days: Weapon Will Be Put on Display on U.S. Ship Off Spain," *New York Times*, April 8, 1966, p. 1.

<sup>350</sup> 1975 Palomares Summary Report, 148; Lewis, *One of Our H-Bombs is Missing*, 222.

<sup>351</sup> "Chief of H-Bomb Search Off Spain Awarded Medal," *New York Times*, May 6, 1966, p. 48.

<sup>352</sup> 1975 Palomares Summary Report, 141.

## U.S.-SPANISH FOREIGN AFFAIRS DURING THE CLEANUP AND RECOVERY OPERATIONS

The Spanish Air Force and Navy were being made aware of the collision from their own soldiers shortly after the accident, but they were unaware that nuclear weapons were involved.<sup>353</sup> The first contact with Spanish officials occurred that morning when Major General Stanley Joseph Donovan, chief of the Joint United States Military Group and Military Assistance Advisory Group, Spain (JUSMAAG) met with Captain General Agustín Muñoz Grandes at the Spanish Air Ministry in Madrid.<sup>354</sup> Muñoz Grandes was the chief of the Spanish High Staff and the Vice President of the Spanish government, making him the second most senior official in Spain after Franco.<sup>355</sup> JUSMAAG was in charge of coordinating relations between the United States and Spain with regard to the base agreements.<sup>356</sup> General Donovan told Muñoz Grandes that there had been an accident over Almería and that nuclear bombs were involved.<sup>357</sup> Like most later Spanish officials, Muñoz Grandes reacted calmly to the news and expressed sympathy with regard to injured or dead American crewmen.<sup>358</sup> Muñoz Grandes also emphasized that Spain's partnership with the United States had certain risks associated with it that his country had to accept.<sup>359</sup>

At 11:05 a.m. on the morning of the accident, the JUSMAAG office called Second Secretary Joseph Smith who became the first person in the American Embassy in Madrid to learn of the Palomares accident.<sup>360</sup> The dignified U.S. Ambassador to Spain,

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<sup>353</sup> Szulc, *The Bombs of Palomares*, 57.

<sup>354</sup> 1975 Palomares Summary Report, 18; Szulc, *The Bombs of Palomares*, 58. Muñoz Grandes had also fought in the Rif with Franco in 1925 and commanded the Spanish Blue Division against the Soviets during World War II. Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 139.

<sup>355</sup> 1975 Palomares Summary Report, 18; Szulc, *The Bombs of Palomares*, 58.

<sup>356</sup> Szulc, *The Bombs of Palomares*, 58.

<sup>357</sup> Szulc, *The Bombs of Palomares*, 58.

<sup>358</sup> Telegram from Embassy in Madrid to U.S. Department of State, dated January 21, 1966, partially declassified on August 15, 1988, located in DDRS, 2; Szulc, *The Bombs of Palomares*, 59.

<sup>359</sup> Szulc, *The Bombs of Palomares*, 59.

<sup>360</sup> Szulc, *The Bombs of Palomares*, 59.

Angier Biddle Duke, was at a meeting of the American Management Association when the news was received.<sup>361</sup> Smith drove fifteen minutes through Madrid to the site of the conference to give Ambassador Duke, the 50-year old inheritor of the Duke tobacco fortune, a printed message that there had been a crash and that “nuclear weapons were involved.”<sup>362</sup>

Ambassador Duke was immediately concerned about the effects of the incident on the future of the base agreements and the possibility of anti-American demonstrations.<sup>363</sup> He was a seasoned diplomat, having served in the diplomatic corps in Buenos Aires and Madrid before being appointed as Ambassador to El Salvador in 1952.<sup>364</sup> Less than two years later, he joined the International Rescue Committee, which he would later lead as its president, which entailed him dealing with refugee problems in such countries as Vietnam and Hungary.<sup>365</sup> Before finally being appointed to Ambassador of Spain, Ambassador Duke served as Chief of Protocol for President Kennedy and later President Johnson.<sup>366</sup>

Upon receiving news of the accident, Ambassador Duke decided to return to the embassy, but quickly changed his mind on the way and drove to the Spanish Foreign Ministry instead.<sup>367</sup> After trying to meet with several different diplomatic officials who were all away at a funeral, the Ambassador met with the Spanish Under Secretary of Foreign Affairs, Adolfo Cortina.<sup>368</sup> He informed Cortina about the incident including the fact that nuclear weapons had been involved.

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<sup>361</sup> “Direct-Action Envoy,” *New York Times*, March 8, 1966, p. 2; Szulc, *The Bombs of Palomares*, 60.

<sup>362</sup> Szulc, *The Bombs of Palomares*, 60.

<sup>363</sup> Lewis, *One of Our H-Bombs is Missing*, 65; Morris, *The Day They Lost the H-Bomb*, 28.

<sup>364</sup> Morris, *The Day They Lost the H-Bomb*, 55.

<sup>365</sup> Morris, *The Day They Lost the H-Bomb*, 55.

<sup>366</sup> Morris, *The Day They Lost the H-Bomb*, 54.

<sup>367</sup> Szulc, *The Bombs of Palomares*, 61.

<sup>368</sup> M. M., “Palomares to Get Desalting Plant,” 31; Szulc, *The Bombs of Palomares*, 61-62. Lewis states that this Under Secretary’s name was instead Pedro Cortina Mauri. Lewis, *One of Our H-Bombs is Missing*, 67.



“I don’t know what the aftermath will be,” Duke said, “But we have to establish an immediate close working relationship. There is going to be a lot of cooperation needed on all sides.”<sup>369</sup> This was a diplomatic way of asking the Spaniards not to use this incident against the United States in future negotiations.<sup>370</sup> He also stated a wish that would largely go unanswered, “We should coordinate the handling of public information.”<sup>371</sup>

Under Secretary Cortina asked in return, “Will this refueling operation continue over Spain?”<sup>372</sup> When Duke responded that he did not know, Cortina did not press the issue, but instead stated, “Yes, we’ll work together.”<sup>373</sup>

As the cleanup continued, Ambassador Duke explained to the Spanish Chief of Staff that there was “some radioactivity spread around, but there’s no reason to be concerned about the health of anybody in the area.”<sup>374</sup> Ambassador Duke also suggested that President Johnson send a message to Franco regarding the accident.<sup>375</sup> However, this idea was rejected by the U.S. State Department because it might make the accident seem more serious than the public was aware.<sup>376</sup> Instead, on January 22 Secretary of State Dean Rusk sent a message to Spain’s Foreign Minister, Maria Castiella y Maiz, assuring that the United States was “determined to do everything that we can to minimize the effects of this incident.”<sup>377</sup>

Despite the general tenor of cooperation that would exist between the Spanish government and the United States throughout the Palomares ordeal, the Franco regime was quick to use the Palomares incident to address Spain’s other primary foreign policy

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<sup>369</sup> Lewis, *One of Our H-Bombs is Missing*, 67.

<sup>370</sup> Lewis, *One of Our H-Bombs is Missing*, 67.

<sup>371</sup> Szulc, *The Bombs of Palomares*, 62.

<sup>372</sup> Lewis, *One of Our H-Bombs is Missing*, 67.

<sup>373</sup> Lewis, *One of Our H-Bombs is Missing*, 67.

<sup>374</sup> Lewis, *One of Our H-Bombs is Missing*, 99.

<sup>375</sup> Lewis, *One of Our H-Bombs is Missing*, 134.

<sup>376</sup> Lewis, *One of Our H-Bombs is Missing*, 134.

<sup>377</sup> Telegram from Department of State to Ambassador Duke in Madrid, dated January 22, 1966, declassified on August 15, 1988, located in DDRS.

concerns, such as its dispute with Britain over rights to Gibraltar. A mere four days after the accident, the Spanish government proposed that the Palomares incident was “evidence of the dangers created by [NATO’s] use of the Gibraltar airstrip.”<sup>378</sup> Franco announced that NATO aircraft would no longer be permitted to fly over Spanish territory either to or from Gibraltar.<sup>379</sup> The Spanish government indicated that the change was due to the fact that they no longer wished to accept the risks of a NATO base near its territory when it did not belong to NATO.<sup>380</sup> The Soviet declaration to the UN that it considered Gibraltar a NATO base (despite Britain’s view to the contrary) probably also impacted Spain’s decision to ban NATO flights.<sup>381</sup> However, the presence of U.S. bases on Spanish territory obviously made Spain a target in any U.S.-Soviet conflict.<sup>382</sup> Spanish officials believed that their moral obligation to defend the West was fulfilled with the U.S. base agreements.<sup>383</sup> Although the Spanish government stated that this was not meant to punish NATO members, it was clearly a reprisal directed at Britain with the accident providing a convenient excuse for an aerial blockade.<sup>384</sup> When announcing the ban, Spain sent diplomatic notes to all NATO members, except Britain, in an apparent attempt to put pressure them to put pressure on Britain with regard to the Gibraltar issue.<sup>385</sup> Other NATO nations were generally annoyed at having been dragged into the British and Spanish dispute over Gibraltar.<sup>386</sup> However, the ban had little other effect since British planes could still use Gibraltar as a refueling location, albeit along less

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<sup>378</sup> Morris, *The Day They Lost the H-Bomb*, 57.

<sup>379</sup> Morris, *The Day They Lost the H-Bomb*, 57.

<sup>380</sup> “Spain Bans Overflying by NATO,” *London Times*, January 22, 1966, p. 8a.

<sup>381</sup> “Spain Bans Overflying by NATO,” *London Times*, January 22, 1966, p. 8a.

<sup>382</sup> “Spain Bans Overflying by NATO,” *London Times*, January 22, 1966, p. 8a.

<sup>383</sup> “Spain Bans Overflying by NATO,” *London Times*, January 22, 1966, p. 8a.

<sup>384</sup> Morris, *The Day They Lost the H-Bomb*, 57.

<sup>385</sup> “Spain Bans Overflying by NATO,” *London Times*, January 22, 1966, p. 8a.

<sup>386</sup> Morris, *The Day They Lost the H-Bomb*, 57.

convenient routes, as they made their way to Africa and the United States was largely unaffected because of its bases located in Spain.<sup>387</sup>

The issue of whether U.S. nuclear armed bombers would continue to fly over Spanish territory was an immediate concern of the Spanish government. Spanish General Muñoz Grandes suggested to General Donovan that aerial refueling of bombers no longer take place over Spain and instead be accomplished over water.<sup>388</sup> On January 25, 1966, the United States publicly announced that it would no longer fly nuclear weapons over Spanish territory and that such flights had been discontinued ever since the accident.<sup>389</sup> This announcement was followed by a Spanish pronouncement on January 29 that such flights would no longer be allowed.<sup>390</sup> However, the Spanish government also indicated that the ban would not affect the U.S. Polaris submarine base at Rota.<sup>391</sup> The Spanish government's decision had followed after a twelve hour cabinet meeting of its legislative body, the Cortes.<sup>392</sup> The Spanish Information Minister, Manuel Fraga Iribarne, stated, "The prohibition is permanent. The ban could, however, be lifted during an emergency by the mutual consent of the two governments."<sup>393</sup> Iribarne also stated that the ban on the flights had been the result of cordial discussions with U.S. officials.<sup>394</sup> Certainly Franco's decision to prevent future flights by U.S. nuclear armed bombers had the potential to sour relations with its prominent power. However, Franco could be relatively assured of continued U.S. support considering the importance of the U.S. nuclear submarine base at Rota.<sup>395</sup> Also, France's President, Charles de Gaulle, was indicating

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<sup>387</sup> Morris, *The Day They Lost the H-Bomb*, 57-58.

<sup>388</sup> Telegram from Embassy in Madrid to U.S. Department of State, dated January 21, 1966, partially declassified on August 15, 1988, located in DDRS, 2.

<sup>389</sup> "Nuclear Flights Ban," *London Times*, January 26, 1966, p. 12a; "US Halts A-Flights over Spain," *Washington Post*, January 26, 1966, p. A6.

<sup>390</sup> "Spain Now Bars A-Bomb Flights," *New York Times*, January 29, 1966, p. 8. See also "Nuclear Flights," *London Times*, February 7, 1966, p. 11b.

<sup>391</sup> "U.S. to Halt A-Flights Over Spain," *Washington Post*, January 30, 1966, p. A20.

<sup>392</sup> Morris, *The Day They Lost the H-Bomb*, 75.

<sup>393</sup> Morris, *The Day They Lost the H-Bomb*, 75.

<sup>394</sup> Morris, *The Day They Lost the H-Bomb*, 75.

<sup>395</sup> Morris, *The Day They Lost the H-Bomb*, 75-76.

that his country may leave NATO, which would cause U.S. bases in Spain to become a more valuable location to station jet fighters.<sup>396</sup> During Senate hearings in 1970 regarding the renewal of the base agreements, the U.S. State Department confirmed that the United States had indeed discontinued overflying Spain with nuclear weapons.<sup>397</sup>

The refusal of overflight rights threatened to set a dangerous precedent for U.S. base rights with other nations as well.<sup>398</sup> In fact, the accident as a whole quickly led other foreign leaders to conclude that a similar incident was entirely possible over any country that allowed the United States to overfly with nuclear weapons.<sup>399</sup> On January 28, the Foreign Secretary of the Philippines, Narciso Ramos asked for a new treaty with the United States that would specify procedures for the landing of U.S. bombers and the arrival of nuclear-powered ships.<sup>400</sup> Pacifist Socialist A.J. Bruggeman of Holland likewise called for a ban on nuclear armed flights over their country, but Defense Minister Piet J. D. de Jong refused because he believed this would harm NATO defense.<sup>401</sup> The British government also refused to ban the flights in response to contentious debate from left-wing socialist delegates.<sup>402</sup>

The Soviet Union quickly capitalized on the negative publicity from the accident, and on February 1, the Soviet representative at a Geneva disarmament conference, Semyon K. Tsarapkin, stated, “It was only a fortunate stroke of luck saved the Spanish population of the area from catastrophe. This shows how urgent nuclear disarmament is, and a nuclear non-proliferation treaty is the first step.”<sup>403</sup> The U.S. delegate, William C. Foster, replied that the accident “demonstrated just the opposite to what the Soviet representative claims” because the bombs had not exploded because their safety devices

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<sup>396</sup> Morris, *The Day They Lost the H-Bomb*, 75-76.

<sup>397</sup> 1970 Congressional Hearing,, 47.

<sup>398</sup> “US Halts A-Flights over Spain,” *Washington Post*, January 26, 1966, p. A6.

<sup>399</sup> Morris, *The Day They Lost the H-Bomb*, 56.

<sup>400</sup> John W. Finney, “U.S. Fears Bomb Loss in Spain Will Peril Right to Other Bases,” *New York Times*, January 30, 1966, p. 15.

<sup>401</sup> Morris, *The Day They Lost the H-Bomb*, 123.

<sup>402</sup> Morris, *The Day They Lost the H-Bomb*, 123.

<sup>403</sup> 1975 Palomares Summary Report, 148; Morris, *The Day They Lost the H-Bomb*, 100.

had worked as intended.<sup>404</sup> On February 16, Soviet Foreign Minister Andrei Gromyko passed a note to the U.S. ambassador in Moscow, Foy Kohler, stating that the accident violated the Limited Test Ban Treaty of 1963 because of the treaty's purpose "to put an end to contamination of man's environment by radioactive substances."<sup>405</sup> The note also stated that the United States was in violation of the 1958 High Seas Convention and called for the United States to end all nuclear armed flights outside of its borders.<sup>406</sup> Tsarapkin reiterated these allegations during the disarmament conference and also noted that nuclear armed flights increased the possibility of war due to an accident.<sup>407</sup> Foster rejected the Soviet charges that the overflights constituted a violation of international treaties and called Tsarapkin's statements "false allegations."<sup>408</sup> The Spanish government also agreed that the accident did not violate the Limited Test Ban Treaty or any other international agreement.<sup>409</sup> The Soviet Union similarly asked the UN to put an end to U.S. nuclear-armed flights.<sup>410</sup>

In order to set the world's mind at ease, Ambassador Duke and his wife and children (as well as other members of the U.S. embassy) were televised swimming off the coast near Palomares on March 8, 1966.<sup>411</sup> Spanish Information Minister Manuel Fraga Iribarne also swam in the 59-degree Mediterranean as 63 media reporters watched and took pictures.<sup>412</sup> A festive atmosphere was maintained as participants drank cocktails and

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<sup>404</sup> Morris, *The Day They Lost the H-Bomb*, 100.

<sup>405</sup> 1975 Palomares Summary Report, 148; John W. Finney, "U.S. Concedes Loss of H-Bomb in Spain," *New York Times*, March 2, 1966, p. 1.

<sup>406</sup> 1975 Palomares Summary Report, 148; "Russians Call on U.S. to End Nuclear Flights," *London Times*, February 18, 1966, p. 11f.

<sup>407</sup> "Russians Call on U.S. to End Nuclear Flights," *London Times*, February 18, 1966, p. 11f.

<sup>408</sup> 1975 Palomares Summary Report, 148; John W. Finney, "U.S. Concedes Loss of H-Bomb in Spain," *New York Times*, March 2, 1966, p. 1; "Russians Call on U.S. to End Nuclear Flights," *London Times*, February 18, 1966, p. 11f.

<sup>409</sup> "Spain Replies on Bomb," *London Times*, February 19, 1966, p. 7c.

<sup>410</sup> 1975 Palomares Summary Report, 148.

<sup>411</sup> Tad Szulc, "U.S. Envoy Swims Where H-Bomb Fell," *New York Times*, March 8, 1966, p. 1; "Direct-Action Envoy," *New York Times*, March 8, 1966, p. 2; 1975 Palomares Summary Report, 193.

<sup>412</sup> "Safety Demonstration Planned," *New York Times*, March 3, 1966, p. 1; 1975 Palomares Summary Report, 193.

several banners were displayed such as “Viva la [sic] Americano” and “Viva la [sic] Wilson.”<sup>413</sup>

On March 14, 1966 (the day before the missing bomb was discovered in the sea for the first time), Ambassador Duke sent a letter to White House Aide Jack Valenti where he expressed his hope that the search for the missing bomb would not be called off without having a discussion as to how it could best be handled with regard to the Spanish government.<sup>414</sup> As he stated in the letter, “The Spanish Government, of course, is not unaware of this possibility, and I foresee no irreparable damage to our relationship if such a decision is handled extremely carefully and properly.”<sup>415</sup>

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<sup>413</sup> 1975 Palomares Summary Report, 193.

<sup>414</sup> Letter from Ambassador Duke, Madrid, to Jack Valenti, White House Aide, dated March 14, 1966, declassified August 19, 1987, located in DDRS.

<sup>415</sup> Letter from Ambassador Duke, Madrid, to Jack Valenti, White House Aide, dated March 14, 1966, declassified August 19, 1987, located in DDRS.

## PUBLIC AFFAIRS

Reporters became aware of the accident and its possible nuclear implications almost immediately. Harold Milks, a Bureau Chief of the Associated Press became interested when a call on another matter to Torrejón was answered by a preoccupied individual and then further calls went unanswered.<sup>416</sup> After several more inquiries, Milks had enough information to file a brief bulletin at 11:55 a.m., but because he could not confirm that nuclear weapons were involved he only stated that “a giant United States B-52 *nuclear* bomber” crashed in Almería.<sup>417</sup> The Pentagon had a long standing policy of not commenting on situations that concerned nuclear weapons.<sup>418</sup> The first Air Force statement regarding the incident eleven hours after the accident would simply state a B-52 bomber and a KC-135 had crashed over Spain but did not mention that nuclear bombs were involved.<sup>419</sup> However, other reporters would continue to speculate on the possibility of missing nuclear bombs, especially since commanding General Wilson made his way immediately to the crash site, which seemed to indicate that this was not a simple aircraft accident.<sup>420</sup> On January 20, after a U.S. media source had described soldiers searching the Spanish countryside with Geiger counters, the Air Force finally confirmed that nuclear weapons had been involved in the accident, but refused to comment on whether any were missing and insisted that there was no danger to Spanish residents.<sup>421</sup>

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<sup>416</sup> Szulc, *The Bombs of Palomares*, 67.

<sup>417</sup> Szulc, *The Bombs of Palomares*, 67. This story was published as “B-52 and Tanker Collide Over Spain; 5 Dead, 2 Missing,” *New York Times*, January 17, 1966, p. 16. See also “Seven Feared Dead as Jets Collide,” *London Times*, January 18, 1966, p. 10f.

<sup>418</sup> Szulc, *The Bombs of Palomares*, 68-69.

<sup>419</sup> 1975 Palomares Summary Report, 183-84; Telegram from U.S. Department of State to Embassy in Madrid, dated January 17, 1966, declassified on August 15, 1988, located in DDRS, 1; “U.S. Said to Hunt Lost Atom Device,” *New York Times*, January 20, 1966, p. 1; Szulc, *The Bombs of Palomares*, 68.

<sup>420</sup> “Nuclear Bomb May be in Wreckage,” *London Times*, January 20, 1966, p. 12f; Szulc, *The Bombs of Palomares*, 68-69.

<sup>421</sup> 1975 Palomares Summary Report, 185; “Nuclear Weapon in Air Crash,” *London Times*, January 21, 1966, p. 9b; “U.S. Said to Hunt Lost Atom Device,” *New York Times*, January 19, 1966, p. 1; Telegram from Ambassador Duke to Department of State, dated January 19, 1966, declassified on August 15, 1988, located in DDRS; Stiles, “A Fusion Bomb over Andalucía,” 56.

Despite this denial, the negative publicity from the Palomares event was causing major headaches for the United States.<sup>422</sup>

Censorship laws of the Franco regime limited what was published in Spanish newspapers about the accident. Spanish officials were hesitant to publicly discuss the incident, even going so far as to decline a January 19<sup>th</sup> offer by Ambassador Duke to express U.S. gratitude for the help given by Spaniards in the rescue and recovery operations.<sup>423</sup> Of the three Madrid morning newspapers, only *Ya* carried a follow up story on January 22, stating that in response to the accident “local measures which [were] adopted in small degree represent only excess caution. Proof of this is that inhabitants of little rural settlements in zone have not been evacuated.”<sup>424</sup> On January 23, *Ya* would reveal for the first time in a censored Spanish newspaper that a nuclear weapon was missing.<sup>425</sup> Spanish daily newspapers would continue to cover the story as the search for the missing bomb continued, but would mostly focus on search activities, victims’ claims and the lack of serious health hazards, without mentioning the nuclear nature of the accident.<sup>426</sup>

Despite censorship of Spanish newspapers, townspeople in Palomares would eventually hear the frightening new word “*radioactividad*” on radios broadcasting from foreign stations.<sup>427</sup> Radio Moscow broadcasted propaganda stating that Palomares was covered in deadly radiation and called the incident a “catastrophe.”<sup>428</sup> One Radio Moscow broadcast also stated that “apparently atomic bomb or bombs which fell in sea have lethal radioactivity” and that Palomares farmers were protesting with shouts of

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<sup>422</sup> Stiles, “A Fusion Bomb over Andalucía,” 49-67.

<sup>423</sup> Telegram from Ambassador Duke to the Secretary of State, dated January 19, 1966, partially declassified on August 15, 1988, located in DDRS, 1.

<sup>424</sup> Duke, “Telegram from the Embassy in Spain to the Department of State,” Madrid, January 22, 1966 in *FRUS*, vol. 12, 388.

<sup>425</sup> Morris, *The Day They Lost the H-Bomb*, 64.

<sup>426</sup> Telegram from Ambassador Duke to Department of State, dated January 26, 1966, declassified on August 15, 1988, located in DDRS, 1.

<sup>427</sup> Lewis, *One of Our H-Bombs is Missing*, 101, 126-28.

<sup>428</sup> Telegram from Ambassador Duke to Department of State, dated January 26, 1966, declassified on August 15, 1988, located in DDRS, 3; Stiles, “A Fusion Bomb over Andalucía,” 57.



“Down with United States! Yankees go home!”<sup>429</sup> Although the residents of Palomares heard these broadcasts on their radios, they were generally believed to be exaggerated because the details in such announcements were known to be untrue. Still fears continued to grow in Palomares, as one citizen stated:

You see, we can hear foreign radio stations and we heard all about the atomic bombs here and all these things. We were scared, and our women were scared... They told us to take showers and wash the clothes we wore on that day. Well, I’ve never taken so many showers in my life. And I burned all the clothes I wore on the 17<sup>th</sup>.<sup>430</sup>

Palomares farmers became concerned that their produce was tainted as buyers in Vera, Valencia and Barcelona refused to purchase tomatoes from the region.<sup>431</sup> However, General Donovan assured the concerned part-time mayor of Palomares, Manuel González Fernandez, that there was no danger to the village or its people (he followed Pentagon policy by not mentioning the missing nuclear bombs) and that the Americans would pay for whatever damages had been incurred.<sup>432</sup> Some payments were made almost immediately, such as the purchase of 4400 pounds of tomatoes rotting in a nearby warehouse for the local going price.<sup>433</sup> The Spanish government also bought large quantities of farm products for ten days in an attempt to support the falling produce market in southern Spain.<sup>434</sup> This was successful at stabilizing the market, although fears of *radioactividad* still persisted.<sup>435</sup> The people of Palomares grew more concerned as the mysterious search by hundreds of American soldiers continued for weeks and they were

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<sup>429</sup> Telegram from Ambassador Duke to Department of State, dated January 26, 1966, declassified on August 15, 1988, located in DDRS, 3.

<sup>430</sup> Tad Szulc, “Palomares Learns to Love the Bomb,” *New York Times*, February 20, 1966, p. SM12.

<sup>431</sup> “Nuclear Flights,” *London Times*, February 7, 1966, p. 11b; Tad Szulc, “Nuclear Accident Bewilders Spanish Farmers,” *New York Times*, January 31, 1966, p. 2.

<sup>432</sup> Szulc, *The Bombs of Palomares*, 77.

<sup>433</sup> Tad Szulc, “Palomares Learns to Love the Bomb,” *New York Times*, February 20, 1966, p. SM12.

<sup>434</sup> Lewis, *One of Our H-Bombs is Missing*, 143.

<sup>435</sup> “Nuclear Accident Bewilders Spanish Farmers: Tomato Crop Left in Fields at Palomares Because of Fear of Radioactivity,” *New York Times*, February 1, 1966, p. 2.

prevented from returning to work in their fields by the Civil Guardia.<sup>436</sup> However, there would never develop a mass sense of fright or panic amongst the populations of Palomares or the nearby villages on the Spanish coast.<sup>437</sup> U.S. soldiers were often seen eating tomatoes and other produce from the fields of Palomares, which helped to stifle fears somewhat.<sup>438</sup>

The possible effects of the accident on foreign tourism (an ever growing portion of Spain's economy) was a major concern for the Spanish government. Britain's Foreign Secretary Michael Stewart was prepared to discuss the possible health hazards to British tourists based on possible radioactive contamination of the land and sea near Palomares, and a statement read on his behalf said that tourists could safely vacation in Spain and swim in its waters.<sup>439</sup> However, even prior to this proposed discussion in the House of Commons there had been no noticeable change in British bookings with travel agents for trips to Spain.<sup>440</sup>

There was some disagreement between the military and diplomatic personnel as to how much information should be disclosed regarding the search for the missing bomb in the Mediterranean Sea. As more exotic search equipment was deployed in Spanish waters, reporters (who could view the ever growing Navy operation from the coast) became restless for more information.<sup>441</sup> Ambassador Duke pressed for a more open information policy as time went on and he was criticized by the Department of Defense for discussing almost all the details of the accident with the media after a trip to the Palomares area on February 3.<sup>442</sup> At the briefing, Ambassador Duke also stated that none

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<sup>436</sup> 1975 Palomares Summary Report, 18; Szulc, *The Bombs of Palomares*, 86.

<sup>437</sup> Telegram from Ambassador Duke, Madrid, to Department of State, dated January 22, 1966, partially declassified on August 15, 1988, located in DDRS, 2.

<sup>438</sup> Telegram from Ambassador Duke to Department of State, dated January 26, 1966, declassified on August 15, 1988, located in DDRS, 2.

<sup>439</sup> "Mr. Stewart May Make Statement Today," February 9, 1966, p. 10g; Morris, *The Day They Lost the H-Bomb*, 123.

<sup>440</sup> "Mr. Stewart May Make Statement Today," February 9, 1966, p. 10g.

<sup>441</sup> "Nuclear Flights," *London Times*, February 7, 1966, p. 11b; Telegram from Ambassador Duke to Department of State, dated January 27, 1966, declassified on August 15, 1988, located in DDRS, 1-2.

<sup>442</sup> Stiles, "A Fusion Bomb over Andalucía," 60.

of the 67 objects recovered from the sea had been “identified as the missing nuclear device.”<sup>443</sup> There had still not been an official Air Force release regarding the search for the missing nuclear bomb, which was leading to “sensationalism” in some foreign presses.<sup>444</sup> This secrecy also led to absurd dialogues between military officials and the press, since the Pentagon would admit that two submarines were being dispatched to Spain “to assist in the search,” but when asked what they were searching for the response was “no comment.”<sup>445</sup> A typical example of a military briefing for reporters was:

Reporter: “Can you tell me whether you’ve located the missing bomb?”

Briefing Officer: “I don’t know of any missing bomb, but we have not positively identified what I think you think we are looking for.”<sup>446</sup>

In order to change this policy, the U.S. Department of Defense and the Department of State suggested a new release on February 12 admitting to the search for the missing bomb, but then General Muñoz Grandes of the Spanish government seemingly refused to clear it.<sup>447</sup> However, some members of the Spanish government would begin to release more information as concerns over precious tourism income grew in the face of international media reports that described the Mediterranean as dangerously contaminated.<sup>448</sup> On March 1, Jose Maria Navascues, President of the Spanish JEN, publicly discussed the missing bomb situation with the media in articles published in

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<sup>443</sup> 1975 Palomares Summary Report, 188. Historian David Stiles indicates that Ambassador Duke did not discuss that a bomb was missing at this briefing, however the 1975 Palomares Summary Report seems to indicate otherwise. Stiles, “A Fusion Bomb over Andalucía,” 60.

<sup>444</sup> 1975 Palomares Summary Report, 188.

<sup>445</sup> John W. Finney, “U.S. Fears Bomb Loss in Spain Will Peril Right to Other Bases,” *New York Times*, January 30, 1966, p. 15.

<sup>446</sup> Tad Szulc, “Palomares Learns to Love the Bomb,” *New York Times*, February 20, 1966, p. SM12.

<sup>447</sup> 1975 Palomares Summary Report, 190-91.

<sup>448</sup> 1975 Palomares Summary Report, 147.

Spanish papers.<sup>449</sup> Therefore, on the next day the United States finally issued a new official press release acknowledging the search for the missing bomb.<sup>450</sup>

The opinion of U.S. and Spanish officials with regard to anti-American protests and other negative reactions of Spanish citizens depended on the circumstances. Anti-government groups in Spain capitalized on the Palomares incident to protest the activities of the Franco regime and its policies with regard to the U.S. bases.<sup>451</sup> As stated in the 1975 Palomares Summary Report, “Much of the reaction represented reasonable nationalism. Most of it represented the work of irrational zealots who would not hesitate to use propaganda in its most insidious form.”<sup>452</sup> The reasoning behind these seemingly contradictory statements largely informed the opinions of U.S. and Spanish officials towards negative reactions by the Spanish public. Some level of unhappiness was viewed as reasonable, especially among the citizens of Palomares and the fishing villages along the coast, considering that the United States was responsible for the contamination and closure of a large part of their territory. However, protests and demonstrations organized by dissident political groups were not tolerated.

At the end of March, wives of the fishermen in the villages bordering the coast (who had been prohibited from entering their best fishing grounds due to the continuing search for the fourth bomb) were considering a march on Camp Wilson because of their loss of income.<sup>453</sup> U.S. military officials were sympathetic to their concern and quickly made emergency payments to the heads of each family “because they were in real need and we were taking no action to help them.”<sup>454</sup> Reuters issued an unconfirmed report that

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<sup>449</sup> 1975 Palomares Summary Report, 191.

<sup>450</sup> John W. Finney, “U.S. Concedes Loss of H-Bomb in Spain,” *New York Times*, March 2, 1966, p. 1; 1975 Palomares Summary Report, 191.

<sup>451</sup> 1975 Palomares Summary Report, 147; David W. Tarr, “The Military Abroad,” *Annals of the American Academy of Political and Social Science* 368, Americans Abroad (November 1966): 41.

<sup>452</sup> 1975 Palomares Summary Report, 147.

<sup>453</sup> 1975 Palomares Summary Report, 168.

<sup>454</sup> 1975 Palomares Summary Report, 168-69.

about fifty people demonstrated in a village near Vera shouting, “Yankees go home and take your bombs,” but the demonstration apparently dissolved peacefully.<sup>455</sup>

In contrast, three weeks after the accident thousands of Spanish students demonstrated in front of the U.S. embassy in Madrid chanting “Spain yes, Yankees no!” “Away with the bases!” and “Yankees out of Spain!”<sup>456</sup> Students that organized the march at the University of Madrid distributed thousands of pamphlets calling for the closure of U.S. bases in Spain and the Spanish newspaper *ABC* reported that some had been signed by the banned Spanish Communist Party.<sup>457</sup> On February 4, the date of the demonstration, Ambassador Duke received a bomb threat by phone (the fifth such call since the accident) and a suspicious package containing an empty Coca Cola bottle, a chocolate bar and a note stating, “Free Viet Nam.”<sup>458</sup> This protest was eventually dispersed by hundreds of police officers armed with leather batons.<sup>459</sup> Demonstrators were knocked over and trampled in the ensuing melee, and at least one policeman who had been beating a student was attacked by the crowd and beaten unconscious.<sup>460</sup> Several people were arrested, including two leaders in the possession of 1,600 notices calling for the march who were later imprisoned for “spreading illegal propaganda.”<sup>461</sup>

Similarly, the Duchess of Medina Sidonia, known as the “Red Duchess” and described in the 1975 Palomares Summary Report as an anti-American “agitator,” organized protests during the recovery effort alleging that the United States was not making adequate claims payments.<sup>462</sup> By January 1967, some residents of Palomares

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<sup>455</sup> Duke, “Telegram from the Embassy in Spain to the Department of State,” Madrid, January 22, 1966 in *FRUS*, vol. 12, 388.

<sup>456</sup> Lewis, *One of Our H-Bombs is Missing*, 241; Morris, *The Day They Lost the H-Bomb*, 99. See also “600 Spanish March in Anti-U.S. Protest,” *New York Times*, February 4, 1966, p. 8.

<sup>457</sup> Morris, *The Day They Lost the H-Bomb*, 74.

<sup>458</sup> Morris, *The Day They Lost the H-Bomb*, 98.

<sup>459</sup> “600 Spanish March in Anti-U.S. Protest,” *New York Times*, February 4, 1966, p. 8; Lewis, *One of Our H-Bombs is Missing*, 241.

<sup>460</sup> Morris, *The Day They Lost the H-Bomb*, 99.

<sup>461</sup> Morris, *The Day They Lost the H-Bomb*, 99.

<sup>462</sup> 1975 Palomares Summary Report, 178.

were unhappy with the results of the claims settlements, with some estimating that only 3 percent of an alleged \$2.5 million in claims had been paid.<sup>463</sup> On the first anniversary of the accident, the Duchess was jailed for three days after leading a demonstration in Madrid where she hoped to discuss these claims with the U.S. Ambassador.<sup>464</sup> She was received by the U.S. embassy on January 23, 1967, but left dissatisfied when her claim that “moral” damages be paid to the area of Palomares as a whole could not be fulfilled.<sup>465</sup> Her actions led to a meeting between the U.S. Foreign Claims Commission and lawyers representing 241 claimants on February 8, 1967 and to some discussion as to the ability of claims brought in Spanish courts to be enforced against the United States.<sup>466</sup> However, in the end Spanish lawyers for the claimants generally believed that their clients would recover more by using the established claims procedures than in Spanish courts.<sup>467</sup> On October 19, 1967, the Duchess was sentenced to a year in prison for organizing the Palomares demonstration in Madrid and she spent much of her jail time demanding better conditions from the warden.<sup>468</sup>

Residents of Palomares would remember the accident and their treatment by U.S. officials for many years. Twenty years after the accident, some residents of Palomares were still worried about the delayed threat of cancer and expressed dissatisfaction over the U.S. handling of claims settlements.<sup>469</sup>

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<sup>463</sup> “U.S. Pays Spanish Claims for Damage by Lost Bomb,” *New York Times*, January 15, 1967, p. 14.

<sup>464</sup> 1975 Palomares Summary Report, 179; Tad Szulc, “Spain Arrests Leftist Duchess Leading Protest March,” *New York Times*, January 18, 1967, p. 3.

<sup>465</sup> 1975 Palomares Summary Report, 179.

<sup>466</sup> 1975 Palomares Summary Report, 179.

<sup>467</sup> 1975 Palomares Summary Report, 180.

<sup>468</sup> “Crusading Duchess,” *New York Times*, November 30, 1969, p. E9; Tad Szulc, “Spanish Duchess Sentenced to a Year,” *New York Times*, October 19, 1967, p. 19.

<sup>469</sup> Edward Schumacher, “Where H-Bombs Fell, Spaniards Still Worry,” *New York Times*, December 28, 1985, p. 2.

## SETTLEMENT OF CLAIMS

When it came to claims settlements, Ambassador Duke was of the opinion that this was one time when bureaucratic procedure should be sacrificed for common sense and good relations.<sup>470</sup> After a visit to Palomares he stated, “If we are to err, I’d rather err on the side of over-generosity than on the side of skimping.”<sup>471</sup> Settlement of claims up to \$15,000 by individuals that alleged either to have suffered injury or property damages as a result of the accident could be made by a U.S. administrative agent on site without a judicial hearing.<sup>472</sup> The 1964 Spanish Law of Nuclear Energy provided that claims with regard to nuclear energy could be made up to 20 years after the incident.<sup>473</sup> Emergency payments up to \$1000 were made as necessary to the people of Palomares and the surrounding villages.<sup>474</sup> The total number of these emergency payments was 222, and most of them were later deducted from settlements when regular claims were filed.<sup>475</sup> Originally, claims could be made at two tents in Camp Wilson, but between March 4 and May 28, 1966 a house in Palomares was used by the U.S. Air Force for this purpose.<sup>476</sup> The claims office would be visited by over 500 claimants on more than 2000 occasions.<sup>477</sup>

The contamination problem made the job of settling claims more difficult than an ordinary aircraft accident, since psychological factors inflated damages, such as when buyers outside of town refused to purchase fish and produce because they were believed to be poisoned.<sup>478</sup> When one of the claims officers checked the markets in the nearby

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<sup>470</sup> Tad Szulc, “Palomares Learns to Love the Bomb,” *New York Times*, February 20, 1966, p. SM12.

<sup>471</sup> Tad Szulc, “Palomares Learns to Love the Bomb,” *New York Times*, February 20, 1966, p. SM12.

<sup>472</sup> 1975 Palomares Summary Report, 149.

<sup>473</sup> 1975 Palomares Summary Report, 151.

<sup>474</sup> 1975 Palomares Summary Report, 152.

<sup>475</sup> 1975 Palomares Summary Report, 154.

<sup>476</sup> 1975 Palomares Summary Report, 154.

<sup>477</sup> 1975 Palomares Summary Report, 157.

<sup>478</sup> 1975 Palomares Summary Report, 15; Telegram from Secretary Rusk to Ambassador Duke, dated January 25, 1966, declassified on August 15, 1988, located in DDRS.

town of Vera, he found a 50 percent drop in price for the area.<sup>479</sup> Claims payments were made for lost wages from the inability to work in closed off fields and fishing areas, as well as for lost profits from destroyed or unpurchased produce and fish.<sup>480</sup> The death of farm animals could not be claimed to be a result of the accident according to JEN since its study of the animals in the area found that they had not suffered radiation contamination.<sup>481</sup> Although there were no direct injuries as a result of the accident, three *ex gratia* payments were made to persons claiming injury even though the claims were denied.<sup>482</sup> Josefa Molina Alarcon, a 75-year old woman, died four months after the accident allegedly from injuries she suffered after she fell when trying to leave her house because she was afraid airplane debris was falling on it.<sup>483</sup> Her daughter and son-in-law received a \$600 *ex gratia* payment for personal injury to their mother.<sup>484</sup> Two other such payments totaling less than \$500 were made to a man who allegedly injured his hand while trying to recover bodies from the airplane wreckage and to a woman who allegedly hurt her back while running from falling debris.<sup>485</sup>

Spanish officials at times made the claims procedure more difficult for residents than it needed to be. Although the Spanish officials generally seemed satisfied with the U.S. claims procedures, they did sometimes tell residents not to file claims or sign settlement papers due to confusion over the process and the language of the forms.<sup>486</sup> These problems were largely resolved by a January 31 meeting where General Wilson addressed the citizens of Palomares on the claims procedure and also as a result clarifying discussions between U.S. and Spanish officials.<sup>487</sup>

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<sup>479</sup> 1975 Palomares Summary Report, 158.

<sup>480</sup> 1975 Palomares Summary Report, 155, 166.

<sup>481</sup> 1975 Palomares Summary Report, 165.

<sup>482</sup> 1975 Palomares Summary Report, 171.

<sup>483</sup> 1975 Palomares Summary Report, 172.

<sup>484</sup> 1975 Palomares Summary Report, 172.

<sup>485</sup> 1975 Palomares Summary Report, 172-73.

<sup>486</sup> 1975 Palomares Summary Report, 158.

<sup>487</sup> 1975 Palomares Summary Report, 158-160.



On April 15, 1966, Francisco Simó Orts traveled to Madrid and Ambassador Duke presented him with a medallion and scroll with the following wording:

As testimony and admiration of the exceptional talents and profound knowledge of the sea of

DON FRANCISCO SIMO ORTS

which led to the finding of the nuclear bomb which fell into the sea on the coast of Palomares, and as a symbol of gratitude on behalf of my country,

I make this document in Madrid, Today, April 15, 1966.

(signed) Duke

United States Ambassador<sup>488</sup>

Apparently this tribute and the nearly \$5000 Orts was paid for his search activities and damage to his boat was unacceptable to him, because on June 24, 1966 he made a claim for 5 million dollars for “salvage service” for his help in locating the fourth bomb.<sup>489</sup> He made several statements in the Spanish press showing disapproval towards the United States and the newspaper, *Arriba*, attempted a subscription campaign towards buying him a new fishing boat.<sup>490</sup> The U.S. government was hesitant to settle this dispute even after the claim was reduced to \$150,000 since it could open the United States to similar claims by other individuals who had assisted in the recovery operations.<sup>491</sup> In the Fall of 1971, the Orts case was settled in the Admiralty Court of New York and he was awarded a consent judgment of \$10,000.<sup>492</sup>

By January 1973, a total of 644 claims had been received for a total of \$2,839,519.63 (excluding the Orts’ claim of \$5 million) and a total of 536 claims had been actually paid for a total of \$710,913.93.<sup>493</sup> One claim may also have been possible under the 1964 Spanish Law of Nuclear Energy for Louis Castro Lopez who was a 12-

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<sup>488</sup> 1975 Palomares Summary Report, 176.

<sup>489</sup> 1975 Palomares Summary Report, 176.

<sup>490</sup> 1975 Palomares Summary Report, 177.

<sup>491</sup> 1975 Palomares Summary Report, 177.

<sup>492</sup> 1975 Palomares Summary Report, 178.

<sup>493</sup> 1975 Palomares Summary Report, 181.

year old living in Palomares at the time of the accident, but later died at the age of 18 from “cancer of the blood.”<sup>494</sup> It was not known if this death was caused by plutonium contamination, but as stated in the 1975 Palomares Summary Report, “This death may have had considerable impact on the Palomares population. Many minds may question the worth of the official assurances concerning ‘no danger from radioactivity.’”<sup>495</sup>

By December 1966, the United States suggested presenting Palomares with a desalination plant in an attempt to address some of the psychological damage that the village had endured in contrast to material losses that had already been addressed.<sup>496</sup> Ambassador Duke believed that the “prompt announcement of the U.S. offer [of a desalination plant] could not help but improve the atmosphere for the base negotiations.”<sup>497</sup> It was also hoped that the offer could be made before the first anniversary of the accident in January.<sup>498</sup> There was some concern in Washington that the offer of a desalination plant might have implied that the water near Palomares was contaminated, but Foreign Minister Castiella scoffed at this issue.<sup>499</sup> The Spanish government decided that it would be better to build a larger plant that could service other nearby villages as well.<sup>500</sup> On June 25, the U.S. Charge d’Affaires, William W. Walker, and Foreign Minister Castiella signed an agreement whereby the United States agreed to provide \$150,000 towards its construction.<sup>501</sup> The plant was contracted to a U.S. firm at a cost of \$427,272.<sup>502</sup> The construction suffered several delays, and by January 15, 1975

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<sup>494</sup> 1975 Palomares Summary Report, 180.

<sup>495</sup> 1975 Palomares Summary Report, 180.

<sup>496</sup> 1975 Palomares Summary Report, 211; Richard Eder, “Palomares to Get U.S. Gift of Desalting Plant,” *New York Times*, June 25, 1968, p. 15; “Memorandum for the Files,” Washington, December 5, 1967 in *FRUS*, vol. 12, 406-407.

<sup>497</sup> “Memorandum for the Files,” Washington, December 5, 1967 in *FRUS*, vol. 12, 406-407.

<sup>498</sup> 1975 Palomares Summary Report, 211.

<sup>499</sup> 1975 Palomares Summary Report, 211.

<sup>500</sup> 1975 Palomares Summary Report, 211-12; Richard Eder, “Palomares to Get U.S. Gift of Desalting Plant,” *New York Times*, June 25, 1968, p. 15.

<sup>501</sup> 1975 Palomares Summary Report, 211-12; M. M., “Palomares to Get Desalting Plant,” 31.

<sup>502</sup> 1975 Palomares Summary Report, 212.

the plant's distribution system to be built by the Spanish was only capable of providing water to Palomares.<sup>503</sup>

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<sup>503</sup> 1975 Palomares Summary Report, 212.

## U.S.-SPANISH FOREIGN RELATIONS AFTER THE ACCIDENT

In the middle of April, Spanish Foreign Minister Castiella visited the United States and in discussions with Secretary of State Dean Rusk, Undersecretary George Ball, and Secretary of Defense McNamara told them that Palomares had “put the validity of our relationship to a very hard test.”<sup>504</sup> The 1975 Palomares Summary Report noted that “there is little doubt that Palomares was used as a lever by the Spanish” during the base agreement renegotiations.<sup>505</sup> As one historian noted, the Palomares incident “unquestionably contributed to the enormous increase in Spain's asking price for the 1968 base renewal.”<sup>506</sup> On September 21, 1968, Foreign Minister Castiella emphasized during negotiations that “Spain cooperated during the Palomares accident in keeping it as quiet as possible”<sup>507</sup> and stressed the possibility of future nuclear accidents like Palomares.<sup>508</sup> He indicated that Spain had accepted heavier risks for the defense of the West than other nations that were members of NATO and that Spain deserved to be admitted to NATO and the ECM under these circumstances.<sup>509</sup> He also mentioned that such membership would be the price for the U.S. bases to be continued after 1968 when the base agreements were up for renewal for the third time.<sup>510</sup> Foreign Minister Castiella would also press for favorable resolution of Spain's Gibraltar claims and stated that failure of U.S. support on this issue could have serious repercussions on future overflights and the base agreements extension.<sup>511</sup> The Spaniards informed Washington that they did not

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<sup>504</sup> Lewis, *One of Our H-Bombs is Missing*, 241.

<sup>505</sup> 1975 Palomares Summary Report, 148.

<sup>506</sup> Rubottom and Murphy, *Spain and the United States*, 85.

<sup>507</sup> “Memorandum of Conversation,” Washington, September 21, 1968 in *FRUS*, vol. 12, 429.

<sup>508</sup> Holland and Raymond, “Spain and Nato,” in *Spain in the 1970s*, Salisbury and Theberge, 158.

<sup>509</sup> Rusk, “Circular Telegram from the Department of State to Certain Posts in Europe,” Washington, May 17, 1966, 7:43 p.m. in *FRUS*, vol. 13, 382-383; Lewis, *One of Our H-Bombs is Missing*, 241.

<sup>510</sup> Lewis, *One of Our H-Bombs is Missing*, 241. See also Rusk, “Telegram from the Department of State to the Embassy in Spain,” Washington, May 6, 1966 in *FRUS*, vol. 12, 394-95.

<sup>511</sup> Duke, “Telegram from the Embassy in Spain to the Department of State,” Madrid, June 18, 1966 in *FRUS*, vol. 12, 383.

wish for an automatic five-year extension of the base agreements and instead asked for an enormous \$1 billion in military aid plus an upgrade of the agreements to treaty status.<sup>512</sup>

However during the late 1960s, there was an increased demand within the United States to break off dealings with Franco's dictatorship because of domestic displeasure with rising international commitments in light of the Vietnam War.<sup>513</sup> Other factors also caused tensions between the United States and Spain, including Spain's continued trade with Cuba (and President Johnson's unrealized threat to suspend aid as a result), restrictive measures by the Johnson Administration against U.S. foreign investment in Spain, and an unpopular visit by the U.S. Sixth Fleet to base at Gibraltar.<sup>514</sup> When Foreign Minister Castiella was finally able to arrange a meeting with President Johnson to discuss the base agreements, the President kept him waiting in the Oval Office for fifteen minutes while he talked on the phone, and then upon hanging up barked, "What do you want?"<sup>515</sup>

However, the Chairman of the JCS, General Earle Wheeler, continued to press for the bases in Spain to ensure a U.S. military presence in the Southern European area and as a means of countering the expanding Soviet Mediterranean Naval Squadron.<sup>516</sup> Wheeler also noted that overflight rights with Spain were more important since France had withdrawn from NATO and U.S. flights over that country and Morocco were restricted.<sup>517</sup> After the Palomares accident, Foreign Minister Castiella noted that "the

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<sup>512</sup> United States Security Agreements and Commitments Abroad Spain and Portugal, Hearings Before the Subcommittee on United States Security Agreements and Commitments Abroad of the Committee on Foreign Relations United States Senate Ninety-First Congress Second Session March 11 and April 14, 1969 and July 17, 1970 (the "1969-1970 Commitments Hearings"), 2308; A. A. Hartman, Staff Director, "Record of the 42d Meeting of the Senior Interdepartmental Group," Washington, September 5, 1968 in *FRUS*, vol. 12, 420-21; Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 146. However, Welles indicates that Foreign Minister Castiella "submitted to the Pentagon a 'shopping list' worth \$450 million." Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 146.

<sup>513</sup> "Memorandum for the Files," Washington, December 5, 1967 in *FRUS*, vol. 12, 408; Sebastian Balfour and Paul Preston, eds., *Spain and the Great Powers in the Twentieth Century* (New York: Routledge, 1999), 241.

<sup>514</sup> Rubottom and Murphy, *Spain and the United States*, 84-86.

<sup>515</sup> Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 146.

<sup>516</sup> 1969-1970 Commitments Hearings, 2353; Rubottom and Murphy, *Spain and the United States*, 86.

<sup>517</sup> 1969-1970 Commitments Hearings, 2353; Rubottom and Murphy, *Spain and the United States*, 86-86.

U.S. base at Torrejón was alarming to the three million inhabitants of Madrid”<sup>518</sup> and Franco mentioned to Ambassador Duke his “preoccupation” over the proximity of the Torrejón base to the Spanish capital.<sup>519</sup> The U.S. Secretary of Defense Clark M. Clifford was hesitant to close the Torrejón base, however because it was the best-equipped U.S. base in Spain and relocating necessary resources to another base would cost between \$10 million and \$20 million.<sup>520</sup> The bases were clearly more important to the U.S. military than to the U.S. Department of State, which effectively let the negotiations be taken over by U.S. military officials.<sup>521</sup> The importance of the bases to the U.S. military was obvious to the Franco as well, who sent a senior general to negotiate the renewal with U.S. military officials in June 1968.<sup>522</sup> However, the United States offered only \$140 million in response to Spain’s \$1 billion initial offer.<sup>523</sup> Spain responded with a \$700 million price tag for the renewal plus a defense commitment from the United States.<sup>524</sup>

The prospect for a renewal was considerably diminished with the announcement by President Johnson that he would not seek reelection in 1968, which caused Secretary of State Rusk to become even more disengaged from the negotiations.<sup>525</sup> Initially, Spain had hoped for an upgrade of the agreements to treaty status, but allowed this point to be dropped from negotiations when opponents of a renewal in the U.S. Congress began to call for an upgrade to treaty status as well.<sup>526</sup> Spain’s initially promising bargaining position due to the frank admission by U.S. military officials that the United States

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<sup>518</sup> “Telegram from the Department of State to the Embassy in Spain,” Washington, July 16, 1968 in *FRUS*, vol. 12, 415.

<sup>519</sup> Duke, “Telegram from the Embassy in Spain to the Department of State,” Madrid, March 13, 1968 in *FRUS*, vol. 12, 415.

<sup>520</sup> Clark, “Letter from Secretary of Defense Clifford to Secretary of State Rusk,” Washington, August 17, 1968 in *FRUS*, vol. 12, 417. See also Paul, “Letter from Assistant Secretary for International Security Affairs (Nitze) to Secretary of State Rusk,” Washington, September 13, 1968 in *FRUS*, vol. 12, 427.

<sup>521</sup> Rubottom and Murphy, *Spain and the United States*, 87.

<sup>522</sup> Rubottom and Murphy, *Spain and the United States*, 87.

<sup>523</sup> 1969-1970 Commitments Hearings, 2315; Rubottom and Murphy, *Spain and the United States*, 87.

<sup>524</sup> Rubottom and Murphy, *Spain and the United States*, 87.

<sup>525</sup> Rubottom and Murphy, *Spain and the United States*, 87.

<sup>526</sup> Rubottom and Murphy, *Spain and the United States*, 86.

needed the bases was not enough to overcome the increasing press attention that the negotiations were receiving as a result of the Vietnam War.<sup>527</sup>

On March 26, 1968, the day that the base agreements were scheduled to expire, Foreign Minister Castiella was able to negotiate an interim agreement with newly elected President Richard M. Nixon and the head of the NSC, Henry A. Kissinger, who apparently agreed with the U.S. military that the bases were necessary.<sup>528</sup> Both governments announced an “agreement in principle” for a renewal of the base agreements for five years.<sup>529</sup> The negotiations on the amount of U.S. military assistance had resulting in the United States offering \$175 million and Spain countering with \$300 million.<sup>530</sup> Although Nixon admired Franco and sent many U.S. officials to Spain to negotiate a new agreement, Congress was still against a U.S. defense commitment or large arms supplies.<sup>531</sup> Certain U.S. Senators were unconvinced that the Spanish bases were still necessary considering that the Cold War had been receding.<sup>532</sup> Also, Franco’s early large request for aid and a threat to court Soviet assistance in the absence of U.S. support were both tactics that backfired in the U.S. Congress.<sup>533</sup> In light of these problems, Foreign Minister Castiella asked for and received from the Nixon administration another interim agreement signed on June 20, 1969 that extended the base agreements to September 16, 1970.<sup>534</sup>

In the summer of 1969, Franco took a variety of steps to improve his bargaining position. He replaced his entire cabinet, including Foreign Minister Castiella who had

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<sup>527</sup> Rubottom and Murphy, *Spain and the United States*, 88.

<sup>528</sup> NSC Memorandum 43 by Kissinger, February 20, 1970; Rubottom and Murphy, *Spain and the United States*, 89.

<sup>529</sup> 1970 Congressional Hearing, 11; Rubottom and Murphy, *Spain and the United States*, 89; Welles, “Spain and the United States,” in *Spain in the 1970s*, Salisbury and Theberge, 147..

<sup>530</sup> Rubottom and Murphy, *Spain and the United States*, 89.

<sup>531</sup> 1970 Congressional Hearing, 1-17; Welles, “Spain and the United States,” in *Spain in the 1970s*, Salisbury and Theberge, 147.

<sup>532</sup> Rubottom and Murphy, *Spain and the United States*, 90.

<sup>533</sup> Rubottom and Murphy, *Spain and the United States*, 90.

<sup>534</sup> “U.S.-Spain Accord Hailed in Madrid,” *New York Times*, June 22, 1969, p. 11; Rubottom and Murphy, *Spain and the United States*, 91.

been criticized in Spain for having overplayed his hand with the United States in the negotiations.<sup>535</sup> The new Foreign Minister, Gregorio Lopez Bravo, followed Franco's new policy of flexibility in its foreign relations, and visited Moscow in January 1970 to pursue the possibility of agreements with the Soviets.<sup>536</sup> Franco also finally named a successor for head of state, Bourbon Prince Juan Carlos, the grandson of Spain's last king, thereby alleviating a long-time concern of the U.S. government that chaos in Spain might follow Franco's death.<sup>537</sup> The United States was also expelled from its air base in Libya, which caused U.S. officials to reactivate the Zaragoza base in Spain.<sup>538</sup> Foreign Minister Lopez Bravo wisely limited the request for U.S. support to social and cultural matters instead of military aid.<sup>539</sup>

Thus in response to this changing environment, the United States and Spain signed a new five-year "Agreement of Friendship and Cooperation" on August 6, 1970 in which defense matters were subordinated to cultural, educational, scientific, environmental, and public information ties between the United States and Spain.<sup>540</sup> The United States agreed to give \$60 million in military grants, \$35 million of which would be used to build a joint aircraft warning system and \$25 million of which would be used to upgrade Spain's military.<sup>541</sup> The United States also supported Spain's receipt of \$120 million in Export-Import credits to buy 36 F-4C Phantom jets and the United States lent 16 naval vessels to Spain indefinitely.<sup>542</sup> Although this deal was substantially less than the \$1 billion in military aid Spain had originally requested, Franco did receive some

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<sup>535</sup> Rubottom and Murphy, *Spain and the United States*, 91.

<sup>536</sup> Rubottom and Murphy, *Spain and the United States*, 91.

<sup>537</sup> Rubottom and Murphy, *Spain and the United States*, 91. See also NSC 6016/1, October 5, 1960, 7.

<sup>538</sup> Rubottom and Murphy, *Spain and the United States*, 91.

<sup>539</sup> Rubottom and Murphy, *Spain and the United States*, 92.

<sup>540</sup> 1970 Congressional Hearing, 1-7; "U.S. and Spain Sign Accord on Bases," *New York Times*, August 7, 1970, p. 1; Harry Debelius, "US Fails to Keep Arms Pact with Spain Secret," *London Times*, August 7, 1970, p. 4a; Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 147.

<sup>541</sup> Rubottom and Murphy, *Spain and the United States*, 93; Welles, "Spain and the United States," in *Spain in the 1970s*, Salisbury and Theberge, 149.

<sup>542</sup> Harry Debelius, "US Fails to Keep Arms Pact with Spain Secret," *London Times*, August 7, 1970, p. 4a; Rubottom and Murphy, *Spain and the United States*, 93.



minor concessions: the bases were no longer called “joint-use” bases, but instead would be referred to as United States facilities on Spanish bases; the United States granted Spain the Rota-Zaragoza pipeline; and the United States agreed to upgrade its early-warning radars in Spain.<sup>543</sup> After opponents in the U.S. Senate demanded that the new agreement be submitted to the Congress for approval, the Nixon administration stated that the new agreement was not a treaty since it did not include a defense commitment and was substantially a continuation of prior base agreements that had been in existence since 1953.<sup>544</sup>

In October 1972, President Nixon visited Madrid and stated that U.S.-Spanish cooperation was an “indispensable pillar for peace in the Mediterranean.”<sup>545</sup> Following a visit by Secretary of State Kissinger to Spain in December 1973, the United States and Spain announced that they would write a Spanish-American Declaration of Principles to solidify the friendship between the two countries.<sup>546</sup> These principles were the precursor to base renewal negotiations, with Spain again seeking treaty status and an acknowledgment of Spain’s contribution to the defense of the West from NATO countries.<sup>547</sup> Both of these demands were eventually dropped by the Spanish during negotiations, especially after NATO members refused to give into the Spanish request.<sup>548</sup> However on October 21, 1975, the Spanish government announced that Franco had suffered a heart attack and two days later the U.S. Department of State indicated that it would be submitting the new agreement to Congress for approval.<sup>549</sup> After Franco died on November 20, 1975, the United States was prepared to work with the new government

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<sup>543</sup> Welles, “Spain and the United States,” in *Spain in the 1970s*, Salisbury and Theberge, 148.

<sup>544</sup> “U.S. and Spain Sign Accord on Bases,” *New York Times*, August 7, 1970, p. 1; Rubottom and Murphy, *Spain and the United States*, 93.

<sup>545</sup> Richard Eder, “Nixon, in Madrid, Stresses Its Role in Area Security,” *New York Times*, Oct. 3, 1970, p. 1.

<sup>546</sup> Rubottom and Murphy, *Spain and the United States*, 107-109. See also NSC Memorandum 179, April 9, 1973, 1-2.

<sup>547</sup> Rubottom and Murphy, *Spain and the United States*, 113.

<sup>548</sup> Rubottom and Murphy, *Spain and the United States*, 113.

<sup>549</sup> “Spain’s U.N. Delegate Discounts Heart Attack,” *New York Times*, October 22, 1975, p. 16; Rubottom and Murphy, *Spain and the United States*, 114.

under Juan Carlos, and Kissinger stated that he believed the new government would ensure that Spain became a nation “of all those human and political values that linked the Western World.”<sup>550</sup> On January 24, 1976, a new Treaty of Friendship between Spain and the United States was signed, and it was quickly ratified by the U.S. Senate on June 24, 1976.<sup>551</sup> Pursuant to the treaty, the United States provided Spain economic assistance in credits and loans totaling more than \$1 billion.<sup>552</sup> In addition, tanker aircraft based in Spain were drastically reduced, nuclear devices were no longer permitted in Spain and nuclear submarines were removed from Rota.<sup>553</sup>

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<sup>550</sup> Rubottom and Murphy, *Spain and the United States*, 115.

<sup>551</sup> “Votes in Congress,” *New York Times*, June 27, 1976, p. 37; “Spaniards Pleased by Pact Barring US Nuclear Arms,” *London Times*, January 26, 1976, p. 4d; Henry Giniger, “U.S. and Spain Sign Pact for Defense Cooperation,” *New York Times*, January 25, 1976, p. 1; Rubottom and Murphy, *Spain and the United States*, 115, 119.

<sup>552</sup> To Implement the Treaty of Friendship and Cooperation Between the United States and Spain, Markup Sessions of the Committee on International Relations, House of Representatives, Ninety-Fourth Congress Second Session, July 29 and August 4, 1976, 10; Henry Giniger, “U.S. and Spain Sign Pact for Defense Cooperation,” *New York Times*, January 25, 1976, p. 1; Rubottom and Murphy, *Spain and the United States*, 118.

<sup>553</sup> Treaty of Friendship and Cooperation with Spain, Hearings Before the Subcommittee on International Political and Military Affairs of the Committee on International Relations House of Representatives Ninety-Fourth Congress Second Session, June 8 and 16, 1976, 80-82; Spanish Base Treaty, Hearings Before the Committee on Foreign Relations United States Senate Ninety-Fourth Congress Second Session on the Treaty of Friendship and Cooperation Between the United States of America and Spain, Signed at Madrid on January 24, 1976, Together with its Seven Supplementary Agreements and its Eight Related Exchanges of Notes (March 3, 12, and 24, 1976), 8; “Spaniards Pleased by Pact Barring US Nuclear Arms,” *London Times*, January 26, 1976, p. 4d; Henry Giniger, “U.S. and Spain Sign Pact for Defense Cooperation,” *New York Times*, January 25, 1976, p. 1; Klepak, *Spain: NATO or Neutrality?*, 87.

## THE AIRBORNE ALERT AFTER THE ACCIDENT

By 1966, U.S. Secretary of Defense McNamara believed that the airborne alert program was no longer necessary and used the public awareness of the Palomares incident to suggest eliminating the program altogether.<sup>554</sup> As he stated in February 1966, the airborne bombers “provide us only a small capability, and it has become particularly small in relation to our huge and growing missile force.”<sup>555</sup> McNamara would repeatedly emphasize that the U.S. missile force was capable of withstanding a Soviet surprise attack and still overwhelmingly retaliate.<sup>556</sup> Others in the Johnson administration agreed with McNamara, noting that the strategic situation had changed since 1961 when the “temporary emergency” program had been implemented.<sup>557</sup> In June 1966, White House officials mimicked comments that had been made in 1965 when noting that the United States had “more Minuteman and Polaris second-strike weapons” and “greater confidence in our warning systems and our ability to get our ground alert aircraft airborne within warning time.”<sup>558</sup> Ending the airborne alert would also cut \$123 million from the budget.<sup>559</sup> Others noted that strategic bombers were more vulnerable to improved Soviet air defenses in 1966 than they had been when the airborne alert program had been implemented during the 1950s.<sup>560</sup>

The JCS and SAC disagreed with McNamara’s analysis, believing that the airborne alert flights put bombers closer to their targets with more accurate delivery

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<sup>554</sup> “Nuclear Flights,” *London Times*, February 7, 1966, p. 11b; Sagan, *The Limits of Safety*, 178.

<sup>555</sup> Sagan, *The Limits of Safety*, 178 citing Department of Defense, *Narrative Summaries of Accidents involving U.S. Nuclear Weapons* (released May 15, 1981), 29.

<sup>556</sup> John W. Finney, “U.S. Reviews Need for H-Bomb Alert,” *New York Times*, February 28, 1968, p. 1.

<sup>557</sup> Memorandum from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 1-2.

<sup>558</sup> Memorandum from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 1; U.S. Department of Defense Summary on B-52 Airborne Alert, dated November 11, 1965, declassified on May 23, 1990, located in DDRS, 1-2.

<sup>559</sup> Memorandum from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 1.

<sup>560</sup> “Nuclear Flights,” *London Times*, February 7, 1966, p. 11b.

capability than the missile force and reduced the chance of a surprise attack that could disarm the United States.<sup>561</sup> Also, the program would allow the airborne alert to be increased to 28 flights per day if a “show of force” was necessary due to another Cuban missile-type crisis.<sup>562</sup>

President Johnson eventually accepted a compromise which allowed a limited airborne alert for training purposes and cut the program from twelve to four nuclear-armed bombers on alert each day.<sup>563</sup> Two of these sorties flew along the Thule BMEWS monitor route and one flew over the northern route (both routes went through Canada), while flights along the southern route continued to be suspended after the Palomares accident.<sup>564</sup> The compromise allowed the program to be continued until the following budget cycle, when it would be phased out unless an analysis of relative U.S.-Soviet strategic capabilities suggested the program was still warranted.<sup>565</sup> However, the difference between the new “training” program and the prior airborne alert may have only been a matter of terminology and a different line item in the budget.<sup>566</sup> As one White House memorandum stated, “The airborne alert was supposedly phased out in [fiscal year 1967-68] when special funds for this purpose were removed from the budget. However, training flights continued, and there was a thin line dividing realistic training exercises from a limited operational airborne alert.”<sup>567</sup> In May 11, 1967, the airborne

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<sup>561</sup> Memorandum for the President from W. W. Rostow to President Johnson, dated May 21, 1966, declassified on March 10, 1990, located in DDRS, 1; Sagan, *The Limits of Safety*, 179.

<sup>562</sup> Memorandum for the President from W. W. Rostow to President Johnson, dated May 21, 1966, declassified on March 10, 1990, located in DDRS, 1.

<sup>563</sup> Memorandum from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 1; Sagan, *The Limits of Safety*, 179. Author Paul Bracken, without mentioning the Palomares accident, states in his book that the airborne alert was “reduced in 1966 because of improvements in radar coverage of the Soviet Union.” Bracken, *Command and Control*, 205.

<sup>564</sup> Memorandum from W. W. Rostow to President Johnson, dated May 11, 1967, partially declassified on May 8, 1990, located in DDRS, 2; Memorandum for the President from Cyrus Vance to President Johnson, dated May 18, 1966, declassified on December 7, 1989, located in DDRS, 1-4.

<sup>565</sup> Memorandum for the President from W. W. Rostow to President Johnson, dated June 8, 1966, declassified on May 10, 1990, located in DDRS, 1.

<sup>566</sup> Memorandum for the President from W. W. Rostow to President Johnson, dated May 21, 1966, declassified on March 10, 1990, located in DDRS, 1.

<sup>567</sup> Memorandum for Mr. Rostow from Spurgeon Keeny, dated April 30, 1968, declassified on September 26, 1988, located in DDRS.

alert training program was further approved by President Johnson through June 30, 1968, seemingly without an extensive analysis of U.S.-Soviet strategic capabilities.<sup>568</sup>

The airborne alert was finally ended along all routes after a B-52 bomber flying over the Thule, Greenland BMEWS radar station crashed on January 21, 1968 after a fire started because of a malfunctioning heating system onboard.<sup>569</sup> The conventional explosives on all four of the B-52's nuclear bombs detonated when they hit the Greenland ice, spreading radioactive plutonium.<sup>570</sup> In contrast to Palomares, the U.S. Department of Defense issued a press release on the next day stating that nuclear weapons had been involved in the crash.<sup>571</sup> However, the United States falsely persuaded the Danish government that the bomber had only approached the base in Greenland because it required an emergency landing site, and not as part of a routine overflight operation.<sup>572</sup> Luckily the plane did not crash into the Thule monitoring station itself since that may have caused NORAD to believe that a Soviet attack had occurred.<sup>573</sup> Luckily there were no injuries in the accident, as crewmen were able to evacuate from the plane and the crash site was uninhabited.<sup>574</sup>

The accident caused major problems in Denmark (which controlled Greenland) since the crash occurred the day before parliamentary elections in that nation, which may have had the effect of granting heavy gains to Denmark's Radical Liberal Party (doubling its parliamentary representation) which was "pacifist-inclined."<sup>575</sup> Denmark responded to the U.S. Department of Defense press release by issuing a statement by Danish Foreign

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<sup>568</sup> Memorandum from W. W. Rostow to President Johnson, dated May 11, 1967, partially declassified on May 8, 1990, located in DDRS, 1-2.

<sup>569</sup> Memorandum for Record by W. R. McClendon, USN Deputy Director for Operations, dated January 21, 1968, declassified on October 25, 1988, located in DDRS, 1; Bracken, *Command and Control*, 205.

<sup>570</sup> Sagan, *The Limits of Safety*, 180.

<sup>571</sup> *FRUS*, vol. 12, 1.

<sup>572</sup> "Intelligence Note," Washington, January 31, 1968 in *FRUS*, vol. 12, 10.

<sup>573</sup> Sagan, *The Limits of Safety*, 180-83.

<sup>574</sup> Sagan, *The Limits of Safety*, 180.

<sup>575</sup> "Intelligence Note," Washington, January 31, 1968 in *FRUS*, vol. 12, 10-11; Sagan, *The Limits of Safety*, 180.

Minister Tabor that the United States was aware that Denmark does not allow the non-emergency overflight of nuclear weapons above Greenland as stated in past pronouncements of its nuclear policy.<sup>576</sup> In contrast, the U.S. government believed that such flights were permitted by a 1951 Defense Agreement between the two countries and that the Danish government had accepted the risk of a nuclear accident near Thule in a conversation between Under Secretary for Greenland Brun and Ambassador Blair in 1964.<sup>577</sup> Denmark therefore negotiated a new agreement with the United States over a period of four months confirming their own view that such flights were not permitted.<sup>578</sup> The Thule accident led to increased criticism of U.S. military policies in Scandinavian countries whose citizens were already unhappy with U.S. involvement in the Vietnam War.<sup>579</sup>

On February 10, 1968, the Soviet Union would also protest the airborne alert program in a diplomatic note stating that nuclear-armed flights were “senseless” in an era dominated by nuclear missiles and that an accident could cause “a whole chain of irreversible events dangerous to all mankind.”<sup>580</sup> In response, a State Department spokesman stated two days later that the airborne alert was “necessary... in the interest of collective security against the threat posed by Soviet nuclear forces.”<sup>581</sup> However as criticism continued to mount, the U.S. Department of Defense announced that it would be “re-examining the military need” for continuing the airborne alert.<sup>582</sup> One official SAC history of the airborne alert states:

Although the accidents at Palomares and Thule contributed to the demise of the program, they were not the sole reasons for discontinuing airborne

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<sup>576</sup> *FRUS*, vol. 12, 1. See also Rusk, “Telegram from the Department of State to the Embassy in Denmark,” Washington, January 28, 1968 in *FRUS*, vol. 12, 8-9.

<sup>577</sup> “Memorandum of Conversation,” Washington, January 23, 1968, 6:30 p.m. in *FRUS*, vol. 12, 3; “Informal Record of Remarks Made to Ambassador Rønne by Assistant Secretary Leddy,” Washington, January 27, 1968 in *FRUS*, vol. 12, 5-7.

<sup>578</sup> *FRUS*, vol. 12, 1.

<sup>579</sup> “Intelligence Note,” Washington, January 31, 1968 in *FRUS*, vol. 12, 10.

<sup>580</sup> John W. Finney, “U.S. Reviews Need for H-Bomb Alert,” *New York Times*, February 28, 1968, p. 1.

<sup>581</sup> John W. Finney, “U.S. Reviews Need for H-Bomb Alert,” *New York Times*, February 28, 1968, p. 1.

<sup>582</sup> John W. Finney, “U.S. Reviews Need for H-Bomb Alert,” *New York Times*, February 28, 1968, p. 1.

alert. The operating costs of the program were rising at an unacceptable rate. Furthermore, the advent of a responsive and survivable ICBM force permitted the bombers to perform more time sensitive duties.<sup>583</sup>

The same official SAC history also describes changes that had occurred between the Palomares incident in 1966 and the Thule accident in 1968 that may have prompted the decision to end the airborne alert at that time. It notes that the first Minuteman II missile was placed on alert in January 1966 and that SAC implemented the Airborne Launch Control System, which allowed Minuteman missiles to be launched after receiving commands from an airborne command post aircraft, on May 31, 1967.<sup>584</sup> Also on October 10, 1967, the first Emergency Rocket Communications System were utilized that “vastly improved SAC’s ability to transmit command control messages to its forces.”<sup>585</sup> In 1968, SAC implemented a policy whereby it dispersed its bombers and tankers to a larger number of bases in order to protect them from a neutralizing first strike.<sup>586</sup>

However, as already has been discussed previously U.S. officials had been arguing even prior to Palomares that advances in U.S. ICBM strength and early warning radar systems such as the BMEWS made the airborne alert unnecessary. Even though the Minuteman II had not been deployed until 1966, it would not be until 1970 that a considerable advancement would be made in nuclear missile design with the development of the Minuteman III, which was the first missile to carry multiple warheads.<sup>587</sup> Also the SAC history of the airborne alert fails to state why the 1968 bomber dispersal program could not have been implemented in 1966.<sup>588</sup> But in any event, following the Thule disaster the airborne alert program was brought to an end.

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<sup>583</sup> Narducci, *Strategic Air Command and the Alert Program*, 16.

<sup>584</sup> Narducci, *Strategic Air Command and the Alert Program*, 17.

<sup>585</sup> Narducci, *Strategic Air Command and the Alert Program*, 18.

<sup>586</sup> Narducci, *Strategic Air Command and the Alert Program*, 18.

<sup>587</sup> Narducci, *Strategic Air Command and the Alert Program*, 17.

<sup>588</sup> Narducci, *Strategic Air Command and the Alert Program*, 17.

## CONCLUSION

In hindsight it seems clear that continuing the airborne alert following the Palomares incident was a bad idea. Serious accidents with horrendous outcomes were bound to happen as long as nuclear armed bombers continued to fly on a 24-hour a day basis. In this respect, the airborne alert was much like the Ford *Pinto*, a program that was continued even though it was known to cause serious problems in the event of an accident.

The Ford *Pinto* was a fine automobile. It did everything it was supposed to do, until it was rear-ended by another vehicle traveling at a minor rate of speed. Then the Ford *Pinto* became a fiery death trap. The Ford Motor Company knew that the car was dangerous when it was involved in a rear-end collision and that such accidents were likely to occur. But the Ford Motor Company believed that the benefits in terms of profits outweighed the costs of human lives, and therefore decided not to recall the cars. Therefore, it is difficult to call an accident involving a *Pinto* where a family is burned alive an “accident” since intentional decision-making was clearly involved.

Similarly, it is difficult to call the Palomares accident an “accident.” Both U.S. civilian and military leaders clearly knew when they instituted the airborne alert that over time such an accident was likely to occur and they knew that when such an accident occurred radioactive material could cause major diplomatic problems, destroy a region’s commerce, and kill human beings. U.S. government documents indicate that the possibility of an accident near populated areas due to the airborne alert was contemplated by officials who anticipated up to twenty aircraft accidents per year if one-fourth of the bomber force was kept airborne. Also, U.S. officials were aware of the results of Nevada tests on non-nuclear detonation of plutonium and unintentional nuclear weapon impacts that the military had performed during the 1950s and 1960s. Therefore, the United States decided that the security benefits of the airborne alert outweighed the costs of Palomares, even before it actually happened. Whether or not this is true is certainly subject to debate, but it is tough to call a predetermined outcome an accident.

Palomares would never have nuclear bombs accidentally dropped on it again since the airborne alert route over Spain was suspended indefinitely after the accident.



To that extent, the United States succeeded in preventing the *exact same accident* from occurring again. However, this obviously did nothing to stop other similar accidents from occurring along the airborne alert routes still in use, and the Thule disaster was a direct result of the inability of U.S. leaders to learn from their prior mistake.

It is difficult to understand the U.S. decision to maintain the airborne alert after the Palomares accident. It is not clear how the compromise reached of keeping just four nuclear-armed bombers on alert each day could improve the nation's defense to such a degree that it warranted the risk of another Palomares. The fact that these were called training missions does not seem to warrant flying with actual nuclear bombs onboard. If training of SAC personnel was needed, then flying the routes either without bombs or with fake bombs would seem to be adequate. In fact, this is what happened after the Thule accident as unarmed bombers continued to fly along the airborne alert routes.

The Palomares accident was no simple aircraft collision. Because the Palomares accident involved nuclear weapons, it necessarily entailed bizarre results that had never been seen before in the history of the world. Hundreds of U.S. servicemen spent months strolling through tomato patches hunting for lost hydrogen bombs, the dignified U.S. ambassador was filmed in his swim trunks taking a dip in the Mediterranean, and two men almost drowned when their tiny submersible was caught in a bomb's parachute at a depth of 2800 feet. At some point a reasonable person has to look at these facts and say, "Perhaps flying nuclear bombs over people's heads every day is not such a good idea."

Even the most mundane facts of the accident are not that mundane. The total cost of the underwater recovery of the missing bomb was over \$10 million and the United States paid over \$700,000 to settle damage claims. Radioactive soil from an area of five and a half acres was shipped back to the United States for burial. The accident strained relations with Spanish officials and caused them to increase their asking price for renewing the base agreements. The incident also provided propaganda material to the Soviets and other anti-American groups, and the international media attention was extremely embarrassing for the United States.

Considering these costs, it is difficult to understand the continuation of the airborne alert especially since U.S. officials already considered the program unnecessary prior to the accident. The airborne alert was originally envisioned in the late 1950s to be

a temporary measure that was necessary until strategic warning systems such as the BMEWS were available. However, by the time of the Palomares accident, these radar systems had been greatly improved and fifty percent of the B-52 force was on ground alert with the demonstrated ability to get airborne in less than the available warning time. Also, by 1964 the United States had a larger number of Minuteman missiles on alert than bombers on ground alert, and these missiles were accurate, reliable and capable of sufficiently responding in the event of a Soviet first strike. The costs of the airborne alert program simply did not justify the potential strategic benefits by the time of the Palomares accident or thereafter.

Of course, this discussion of the facts that argue against the continuation of the airborne alert after the Palomares accident is ignoring perhaps the most important question of all. The lock-in safety device that was meant to prevent the bombs from being accidentally jettisoned from the aircraft failed. The parachutes that were supposed to gently guide the bombs to Earth so that they would not suffer conventional explosions failed. What if the safety devices that were meant to keep the bombs from experiencing a nuclear explosion failed?

At this time, no one can answer this horrific question completely. But one thing is for sure. There would no longer be a Palomares.

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