

Military Machines and Nuclear Accident: Burdick and Wheeler's *Fail-Safe*

In the wake of the Korean War, President Eisenhower ordered a major increase in US defense spending, but the nuclear build-up of the late fifties received a double shock in 1957 when the Russians launched their first intercontinental ballistic missile (ICBM) and Sputnik satellite. The US Strategic Air Command (SAC) promptly reduced its threat reaction time to 15 minutes or less, and by the end of the decade was maintaining a round-the-clock airborne alert force. During the 1950s, both superpowers had been developing complex systems of weaponry (including surveillance, delivery, monitoring, etc.), which were being designed to respond rapidly and automatically. Sociologist C. Wright Mills outlined the probable sequence as baldly as possible:

Should accident or breakdown occur, S.A.C. drops its stuff. Or the missile is launched. The Americans have massively retaliated. The Russians retaliate massively. A few hours later the world is a radioactive shambles, a chaos of disaster. (52)

In 1958, Eisenhower announced details of the new *fail-safe* defense system, a term borrowed from engineering which signified that the system had built-in safeguards against accident. The most prominent of these safeguards, the one which novelists immediately picked up, was whether it was possible or not for a renegade bomber for whatever reason to go past its *fail-safe* point and thus trigger a nuclear holocaust. Mills, for one, was

unimpressed by the new system and argued that neither malfunction nor human error could be ruled out.

These developments had a number of consequences which bear directly on the fiction of nuclear accident. Firstly, the principle of Mutual Assured Destruction (with its appropriate acronym MAD) made triumphalist rhetoric absurd. Secondly, the refinement of the US defense machine meant that a potential technological sequence of strike, response, and counter-response was taking shape, a sequence which might happen more rapidly than human response. Mordecai Roshwald satirized both of these factors in his novel *Level 7* (1959) by divorcing political rhetoric from actuality and by streamlining his defense bunker to the last extreme. A third change in US political life was noted by Eisenhower in his farewell address of January 17th, 1961, in which he makes his famous statement about the emergence of a "military-industrial complex" with staggering "potential for the disastrous rise of misplaced power" (616). Mills had similarly identified a military metaphysic which used "men as functions of a social machinery and which was rapidly developing its own impetus" (83-4), apparently diminishing the role of human action within this new context.

A foretaste of the sort of narrative which would be created by these new military circumstances was given by a dispatch which appeared in the *New York Times* on April 19th, 1958:

Imagine that you are the commander of a B-52 jet bomber of the United States Strategic Air Command. You are in flight toward an enemy target. You are carrying thermonuclear bombs capable of more destructive force than the combined American and British Air Forces delivered in all of World War II.

This is not practice. Eight minutes ago you were dispatched from base. You are bound northward across the Pole, flying faster than the speed of sound.

Fourteen minutes ago your base, and every other Strategic Air Command base in the world, received a flash from the DEW line (distant early warning) network across northern Canada that the radarscopes

indicated a convergence of foreign objects flying swiftly toward the United States.

Your aircraft was the last of the sortie off the runway; you were airborne in six minutes; you have been flying for eight minutes. Enemy missiles that must have passed you in flight would be due to strike North America in one minute. Other United States bombers are in the air all over the world with reprisal bombs.

But this is one thing you alone do not know: Since your take-off, the foreign objects picked up on the radar scopes turned out to be a shower of meteorites [all the other bombers turn back] . . .

Do you proceed to your target, does your bombardier press the button and does the first nuclear bomb go "down the chimney" to start World War III? All this because one of the Strategic Air Command's vast fleet failed to receive a turn-back order?

Not so. You are saved, you and many others, by a powerfully simple plan called "Fail Safe." It is proof against error, human or mechanical.

The overwhelming emphasis in this narrative falls on action, specifically speed of action ("flash" "swiftly," etc.), but this action is conveyed through phrases ("you are in flight") which suggest an extended present. Sequence is created by the completing analepses which convey earlier information about take-off and tempo established by the specification of minutes. Although the piece describes a single bomber, the aircraft is firmly contextualized as a functioning part of a massive defense system. The article gradually shifts its focus from the drama of specific events until it becomes a tacit celebration of SAC, that is, of military organization. This dispatch usefully highlights a number of central themes and issues which the fiction of nuclear accident applies—for instance, the startling compression of time into a matter of minutes. We shall see that such temporal compression generates the main single source of suspense in the novel *Fail-Safe*. As just noted, the dispatch also revolves around the relation of the particular bomber to its containing system and

explicitly asks the question whether the former can act on its own. There is, as well, the closely related issue of whether mechanical reaction can outstrip human response. In these narratives what might happen next is all too familiar and can be designated simply as "it" without causing the reader any confusion. The new question becomes: when will "it" happen? But the dispatch contains an enigma, namely the identity of the "foreign objects," which, once revealed, arrests the drive towards the predictable climax.

Before leaving the dispatch, we should also note its heavy ideological coding. All the specifics fall on the American side and underline that the action is responsive against a rather coyly unnamed "enemy." The reference to World War II appears partly for descriptive purposes, to convey scale; but the metamessage is that America finds itself in an analogous situation of threat. Although the crux of the excerpt lies at the point where World War III might break out, the whole vocabulary of the dispatch suggests that a state of combat already exists. A similar contradiction informs the dispatch's reference to attack and defense. When the United States is under attack, the missiles "converge" on the country as if from a hostile area of undefined extent. However, when America gears itself for military response the scale reverses. Now bombers set off "all over the world." The political implications of this rhetoric are clear. When the United States is under attack it is reduced to a spatially limited and therefore vulnerable entity. When the US responds, when it is acting in self-defense, the US is spearheading a *worldwide* reaction to aggression. Indeed the "world" is not conceived as having alternative political systems, but only figured as a huge spatial area of strategic value. Furthermore, most of the dispatch consists of a narrative which takes the reader to the brink of disaster and then draws back, no doubt with the intention of reassuring the reader that mistakes do not happen.

The narrative later returns to the same scenario (reader as bomber commander, flying towards *fail-safe* point, etc.), this time with the crucial difference that the order to attack has been given. The dispatch uses narrative initially to reassure the reader of the system; then secondly to confirm. Since the defense system of the US is depicted as preventive, however, the hypothetical sequence

of attack which is given to prove that America means business simultaneously demonstrates the failure of that same system.

Although the fear of accidental nuclear war dates back to 1946, that fear had greatly increased by the end of the fifties and was also being subjected to dramatic analysis through war games. One of the leading proponents of these games was Herman Kahn, the technical adviser to the US government on nuclear weapons who admitted that popular fiction like *On The Beach* had “picked up the idea of ultimacy” (9) and that writers such as Pat Frank, Philip Wylie, or Stephen King Hall were considering serious scenarios of unilateral disarmament, accidental war, and so on. One of the best known narratives of nuclear accident from this period was Eugene Burdick and Harvey Wheeler’s *Fail-Safe* which, though published in 1962, had its germ several years earlier.

In 1959, Wheeler published “Abraham’59—A Nuclear Fantasy” under the pseudonym of F.B. Aiken. The story recounts the growth to retrospective wisdom experienced by the unnamed narrator, who has witnessed a mutinous nuclear attack on Moscow by a SAC squadron. The narrator has been involved in developments in his capacity as a Russian interpreter for the US President and is called in by the President to assist in a crucial telephone call to Krushchev. The story’s opening lines establish a theme of missed signs: “Now that it is all over it is easy to think back and realize that today’s events had been well prefigured, even before the Soviet launching of Sputnik 1 in October of 1957” (18). The frame of the narrative is established as a mistaken opposition the narrator takes to the new methods of analytical projection which are developed for Cold War strategy from the mid-1950s onwards. He dismisses the new discourse of “lead-times” (the times “from the point when the ‘go ahead’ on research and development is given to the attainment of appreciable numbers in inventory”)(Kahn 316)—and the dispassionate examination of scales of destruction as being a matter of “paper logic,” but the story revolves around the narrator’s later recognition of the need for such discourse. Time, in other words, is a central preoccupation in the narrative which establishes a present moment of consequence and realization towards which all earlier events point. The “it” of the opening sentence gestures towards a climax which is hypothesized by Cold

War analysts and later by the US President, but which is deferred beyond the ending of the story. The narrator is summoned to the President's office and told that in approximately four hours Moscow will be obliterated. The President decides that New York must be sacrificed since for Krushchev "nothing short of this could prove to him our sincerity." The story then breaks off at the point where the President reaches for the telephone.

The narrator functions here largely as a witness since the story stresses that no exchange takes place between himself and the President. Rather, the President uses the narrator's presence to rehearse events and consider possibilities. By so doing the very language of hypothesis ("suppose A . . . then would B?," etc.) which the narrator had earlier been mocking, now becomes valorized by its reutterance from the President's mouth. The story therefore tacitly attaches a very special status to the President. "Abraham '59—A Nuclear Fantasy," not only suggests a biblical prefiguring of events quite distinct from historical anticipation, but also implicitly draws an analogy between Abraham's son and the President's country, specifically New York. The President thus stands in a quasi-paternal relation to his fellow citizens and a number of questions follow which the novel *Fail-Safe* was to develop in detail: are events being focused on the President as a test of his political "faith," will there be a last-minute reprieve, as in the biblical story, providing the President shows his willingness to act? The short story does not answer these questions, instead concentrating on feeding the reader's speculative imagination. The "fantasy" of the title becomes questioned by the matter-of-fact neutral style so that presumptions of unlikely events find themselves replaced by a suspicion that all too familiar fears are being realized. Indeed, the elision of the climax in the narrative suggests a suppression more powerful than explicit description because the absence of a clear climax leaves the reader speculating about exactly what did happen.

"Abraham '59" implicates the US military as a whole in the blindness of the narrator. The policy of SAC is to train its bomber crews into a state of "fanatical devotion" which dehumanizes them and alienates them from national norms: "at the moment they rose into the air with their 'pistols cocked' they were in effect

demoniac anti-Communist janisaries" (20). Paradoxically, the procedures designed to safeguard against human error actually increase that likelihood by creating human automata. The cultural encoding of the crew as figures from a Western culture is erased and transformed into a symbolic opposition between America and its bombers (human/devilish; native/oriental; rationally questioning/blindly responsive, and so on).

The novel *Fail-Safe* elaborates on the issues raised in Wheeler's original 1959 story. Written jointly with the novelist Eugene Burdick (famous for his 1958 collaboration with William Lederer, *The Ugly American*), this novel describes how in 1967 a minute electrical fault misdirects a group of US nuclear bombers to set course for Moscow. Although US and Russian fighters destroy most of them, two manage to make their way to the Russian capital, and the world seems poised on the brink of nuclear holocaust. It is only telephone negotiations between the Russian Premier and the US President and the President's sacrificial gesture of bombing New York City in compensation for the destruction of Moscow which avert an even larger nuclear catastrophe.

Burdick and Wheeler make it clear in their novel's preface that *Fail-Safe* was intended to address an issue only raised by implication in such works as *Level 7* and *Dr. Strangelove*: the information gap between military activity and public awareness. The fundamental journalistic purpose of the novel is to close this gap. *Fail-Safe*, therefore, puts a high premium on descriptive data. Whereas in *Level 7*, Mordecai Roshwald was concerned to portray *any* technological defense system, Burdick and Wheeler specify names and other details to make it clear that this is an American system. They use the device of newcomers to each location to rationalize exposition or the kind of rapt attention to guards, procedures, and equipment which situates the narrative, and which highlights the importance of the screen in the headquarters bunker. Secondly, the secret must repeatedly be related to the familiar. The translator Peter Buck's progression at the beginning of the novel from the Washington streets into the White House and then down into the nuclear bunker sets the keynote for similar sequences in the novel where the strange is contextualized in relation to places the reader would know. Burdick and Wheeler

follow a similar strategy with the crisis they are narrating by comparing it to the outbreak of the Korean War or the U-2 incident, and also with the political figures who are described. *Fail-Safe* can be read as a *roman à clef* in so far as several of the main characters are clearly modelled on contemporary figures. The President is a thinly disguised version of Kennedy; several reviewers thought Swenson was based on the Secretary of Defense Robert McNamara, and so on. Once again, as with place and historical event, the aim is to take the reader into an extension of the familiar. Otherwise, as the authors admit, "a fictional portrayal employing declassified information may seem like science fiction to the layman" (7).

The novel's engagement with secrecy through what is by definition a public and publicizing medium is expressed within the narrative by a spatial opposition between surface and depth. At one point as the crisis mounts, this opposition is made absolutely explicit:

Now the world was living on two levels. There was an overt public level and a covert secret level. On the overt level the world's business proceeded serenely, innocently, and in its normal fashion: men worked, died, loved, and rested in their accustomed ways. But alongside this normal world, and ignored by it, the covert world went about its huge task of bringing two war plans to readiness. At that moment the covert, counterpoised world of war was in a waiting stage; its war dance had come to a high level of preparation and then stood arrested, held in a miraculous balance, a marvellous intricate suspension brought about by suspicions, intentions, information, and lack of information. (199)

This passage sums up the nexus of contrasts which pervade the novel. Although the novel's surface is characterized by openness, normality, and civilian life, the novel's subsurface is a place of concealment, secrecy, burial, and military operations. Two key locations in *Fail-Safe* are the SAC headquarters at Omaha,

Nebraska, and the nuclear bunker under the White House, which are both placed, literally, below the level of civilian awareness. In so far as the quoted passage gives a split image, it summarizes the authors' perception of contemporary American life as a civilian top layer covering an enormously elaborate military machine. The description of a Colorado missile base in Chapter 4 follows a similar pattern. The surface (ground level) reveals nothing although, below, the crews live a bizarre, estranged existence. Unlike Kerouac's 1958 novel *The Subterraneans* where the latter term denotes a combination of awareness and social nonconformity, these "subterraneans" become existential heroes in an absurd, separated world. *Fail-Safe* introduces a series of analogies which represent the base under different aspects: a collective coffin (in relation to impending death), and as a monastic order (to stress the enclosed obedience of their lives). Whatever the metaphor, the crew's status as military elite is never questioned.

Shortly after the novel's publication, Harvey Wheeler explained one of his purposes as being to articulate fear: "No one has provided them [the public] with a means or the vocabulary for discussing the deep secret horror. We hope the book does just that and that it will give the reader the sort of catharsis Aristotle attributed to Hellenic tragedy" (Harvey 23). We shall see in a moment how the tragic pattern works in the novel. Here Wheeler helpfully indicates the psychological connotations of space in the action. The confining interiors which define most scenes suggest the limitations of an ideology and also encode depths with the suppressed fear which, the authors imply, underlies the US military posture.

The novel begins with a preliminary narrative of crisis followed by resolution. Chapter 2 describes the detection of an UFO on the SAC screen, the resultant rise in "conditions" (levels of preparedness) and punctuates the attempts to identify the UFO with a gradual countdown to the *fail-safe* point. In miniature, this chapter raises the problems which the novel as a whole will then develop: the efficiency of procedures, the role of the human element, the capacity operatives have to distinguish a commercial airliner from the "countless war games" they have experienced.

The ultimate issue here, however, is the relation of man to his technology. In one of the shrewdest reviews of the novel, Norman Cousins made this very point, arguing that "it is about the ultimate war between man and his machines . . . It shows how the things men worship determine who they are, how they behave, and how they will die" (22). Burdick and Wheeler skillfully plant the seed of this theme in Chapter 2. Immediately after an officer arrogantly claims that the system is infallible a tiny fault occurs: "At that moment in Machine No. 6 a *small* condenser blew. It was a *soundless* event. There was a puff of smoke *no larger than a walnut* that was gone *instantly*" (emphasis added, 44). This inset gives us an event so reduced in time and size that it is virtually undetectable. And yet it will be the trigger to a sequence leading ultimately to mass destruction.

The false alarm in the second chapter of *Fail-Safe* demonstrates an ideal of professional competence which implies that the novel's treatment of technology is not as straightforwardly antagonistic as Cousins suggests. The commander of the SAC War Room reflects: "He was not the faceless servant, an automatic cog, in an elaborate machine. The War Room was the most delicate of man-machines" (36). At first, the term "mechanism" can be used as a synonym for "system" without any negative connotation, but when bombers fly past their *fail-safe* point and head for Russia, the system fractures with one part trying to neutralize the other. The foregrounding of procedure constantly reminds us that a patterned, predictable sequence has been initiated. Most of the novel's subsequent action consists of discussions of how to retard that sequence. Whereas the unexpected is traditionally a source of plot interest, in this novel the appalling predictability of events emerges as a virtual dissociation of action from human control. And whereas in traditional cinematic or fictional narratives of bombing missions, the control center gives guidance and moral support to the pilots, that communication is now cut by radio silence. The very emphasis on command centers in this novel reveals their helplessness. *Fail-Safe* thus presents an action-within-an-action and narrates the struggle (through the framing plot) to regain the human initiative over events. This struggle emerges partly as a series of calculations at every phase of the technological sequence.

So the Pentagon experts calculate that of the group of bombers, two should be able to elude both US fighters sent to shoot them down and the Russian defense network. Sure enough, two armed bombers do get through and head for Moscow. The novel reverses the usual chronological sequence of the thriller genre where hypotheses are formed about an already completed action. Now the hypotheses are predictive, expressions of the most likely turn of events.

The hyphenated term "man-machines" suggests an ideal balance between man and technology, and the novel repeatedly celebrates such a balance in its depiction of procedures. For Rupert Wilkinson this is only one of three contradictory stances which the novel takes towards technology; the other possibilities being that "advanced technical systems will diminish rather than enhance individual power" and that technology and its operators become invested with "intense aesthetic qualities" (233, 235). The last is an obvious correlative of the first in that smoothly operating procedures are described as an "orchestration," a beautiful spectacle of efficiency. The second attitude which Wilkinson notes represents the existential cost of the technology where operatives register estrangement both from ordinary civilian life and at times even from their own bodies as if they themselves have become mechanized. At no point, however, does the novel allow us to forget our dependence on the media. There is, for example, an important cinematic dimension to the action. The Big Board in SAC headquarters, we are told, "resembled a gigantic movie screen" and the analogy is repeated as the screen goes through dissolves or close-ups on a scene filmed from a spy satellite. In combat the description alternates between electronic signals and their explanation: "A small blip fell away from the No. 6 plane . . . It was a Bloodhound . . . In the next second there was a great mushrooming blotch on the scene. The warhead of the Bloodhound had gone off" (204). The description here alternates between sign and signification, angled through the perspective of a military adviser, and the novel thereby preserves a close connection between technology and human consequence.

We saw earlier how the preliminary narrative of Chapter 2 foregrounded the passage of time. In a philosophical moment, the

President explains to his translator, Peter Buck, that an emergency is nothing more than "time and a decision." And all the major themes of the novel are ultimately focused on time. Several reviewers agreed that the novel managed its action with great skill. John Phelps praised its "steadily mounting suspense" (28) and Norman Cousins noted that the reader was "quickly subdued into staying with it until he finishes it" (22). One source of this power lies in the novel's combination of reminders that time is passing. There are constant references to clock-time throughout, but that does not mean that the novel follows a simple linear chronology. The entire first half (more than a hundred pages of the novel) covers a time-span of about seven minutes by introducing analeptic accounts of characters' earlier lives or by suspending the action in one location and repeating the discovery of crisis at another. We thus often encounter a case of narrated time greatly exceeding story time. The different sequences all come together in Chapter 11 where time headings are placed in a sequence: "1044 hours: Omaha," "1044: the Skyscrapers," and so on. Technology gives the action its time limits and, as each moment takes on a heightened value, duration is drawn out to emphasize the comparative helplessness of those in the command centers. The nuclear strike on Moscow gradually becomes identified with the inevitable progression of time itself and the eschatological implications become stronger until Buck imagines an "End of the World" scenario where the Russian Premier's fingers are poised over a row of buttons.

One obvious way that the fear of a nuclear Armageddon can be conveyed is through such manipulations of time and by gearing the reader's expectations to those of the characters. Clock-time itself offered a potential way of conveying the urgency of the period. The cover of the *Bulletin of the Atomic Scientists*, for instance, carried a clock face with the clear implication that time was running out. A device similar to the timing of narrative segments is used more crudely in William Craig's 1971 novel, *The Tashkent Crisis*. This fantasy attacks the retrenchment of the Carter years, depicting the US military establishment as frustrated by the lack of appropriations. A hawk in the Russian Politburo seizes power and trains a new laser weapon on Washington, giving

the US an ultimatum to surrender. The novel's main ironies are levelled against a naive and malleable public which fails to recognize the Soviet threat. As the minutes tick by, each section being introduced by clock faces, the world seems to drift nearer to a holocaust until the Russian moderates regain control of the situation and bundle their renegade off to a "comfortable dacha" on the Black Sea.

Fail-Safe does far more than whip up suspense. As events are unfolding, the narrative also devotes considerable space to the discussion of defense strategies. This fact is significant in itself since Robert M. Hutchins, a mentor to the authors, argued that the Cold War had made statesmen suspicious of discussion. But, he continued, "discussion implies that there is more than one point of view. The notion that the truth may be arrived at by discussion is peculiarly applicable to practical, political, economic matters" (90). Within the specific context of the novels of nuclear accident, discussion and debate counter two tendencies of the Cold War ideology, namely suppression in the name of secrecy, and an authoritarian view of truth as singular and fixed. The academic adviser to the military, Grotteschele, has accordingly a special role to play in *Fail-Safe*. Partly based on Herman Kahn and Edward Teller, he personifies a certain way of considering nuclear strategy by breaking it down into abstract quantifiable problems. It is not the specific details of Grotteschele's advice that stand out so much as a dispassionate, even mathematical approach to nuclear confrontation. In his 1960 study, *On Thermonuclear War*, Kahn discussed the very dispatch from the *New York Times* quoted earlier. Kahn argued that the *fail-safe* system could be dangerous if the Russians employed a similar one and if "either of the two sides is so careless in his operating practices that a 'self-fulfilling prophecy' is set in motion"; the solution, he continued, is to build the accident factor into the system although there could be no *fail-safe* for ICBMs (205, 209, 259). More generally, Kahn takes the liberals and idealists in the US to task for not thinking through the issue of nuclear confrontation and for believing that a thermonuclear war would destroy the entire planet. The latter belief, he notes, is encouraged by popular novels like *On the Beach*.

In *Fail-Safe*, Groteschele represents a similar way of thinking which the novel as a whole refutes. One method followed by Burdick and Wheeler is to set up dialogue-scenes where strategic issues are debated rather than simply expounded. Another is to privilege a character like General Black who focalizes a Pentagon briefing and who registers an estrangement from the scene: “. . . they had lost contact with reality, were free-floating in some exotic world of their own . . . They were caught in a fantastic web of logic and illogic, fact and emotion” (152). Groteschele personifies this Catch-22 spiral of hypothesis and counter-hypothesis that traps the Americans within a proof threshold in which it becomes virtually impossible for them to demonstrate to the Russians the true situation. They fall victim to what Mordecai Roshwald called in a slightly different context the “computer mentality,” the “naive acceptance of the game theory as a pattern for dealing with international conflicts” (32). Groteschele, in short, sums up the negative side to the US defense system. The main chapter dealing with him, “The Organized Man,” is an ironic echo of William H. Whyte’s stereotype of corporatism, the “organization man.”

It is important to note that *Fail-Safe* starts from a position of ideological separation between East and West. In an interview Burdick explained: “One of its central themes is the paralyzing immobility into which both sides are frozen and the fact that we are now duplicating each other—not only in weaponry but in stereotyped thinking about each other” (Harvey 23). The SAC missile crews have a similar perception that on the other side of the world “there was another set of silos, another pattern of hard sites, another organization of men—almost, they assumed, precisely like theirs” (75). This disturbing, but for the moment neutral professional insight, suggests a parallelism between East and West which the action gradually confirms. Groteschele, on the other hand, speaks as an ideologue committed to *denying* this similarity. For him the Russians are qualitatively different: “The Russian leaders are Marxist ideologues . . . not normal people.” In fact they are not people at all, but rather, as he puts it, “human calculating machines” (181). Groteschele is by no means the sole spokesman for a hawkish military posture combining opportunism and latent fascism, only its most articulate

representative. The chapter dealing with his past shows him disposing of liberal opposition in favor of an austerely "realistic" recognition of Russian aggression. Burdick and Wheeler use the "hot wire" between Washington and Moscow to reject this assertion and bring the two leaders together into a common predicament. The telephone humanizes Krushchev by giving him a voice, and the novel as a whole increases the number of recognized similarities between the two sides. In each case, for instance, an officer collapses under the strain of the crisis. One of the novel's many ironies lies in the fact that the recognition of these similarities occurs too late to prevent the bombing. The role of the communications media in this novel is central since they literally bridge the ideological gap between East and West.

Burdick and Wheeler have gone on record as stating that they wanted an effect similar to a Greek tragedy in *Fail-Safe* and to a certain extent the novel does conform to a tragic pattern, but with the system itself as protagonist. The tiny flaw in one of the activation machines reveals itself immediately after an officer declares the system to be "infallible." In other words, the collective hubris within the defense establishment is thrown into relief by a sequence of action, a tragic mechanism, triggered by the initial fault. There then follows a series of peripeties or narrative cruxes, particularly those points at which the US Air Force is ordered to fire on its own bombers and at which the Americans establish direct communications with their Russian counterparts. From Chapter 14 onwards, the novel traces out a developing crisis which concentrates the action on the two national leaders negotiating over the "hot wire" (the "hot line" between Washington and Moscow was installed in 1963 in the wake of the Cuba crisis). Rupert Wilkinson has stated sweepingly that "nearly all the main characters in *Fail-Safe* receive great hero-worship" (227) but, in fact, special heroic status is reserved for the US President and his Russian counterpart because they take the destinies of their respective countries in their hands. The translator Buck bears witness to the President's face reflecting the "ageless, often repeated, doomed look of utter tragedy" (225), but the novel reserves the role of tragic spokesman for Krushchev. Perhaps for such reasons Malcolm Muggeridge found these sections of the

novel the most powerful: "Both men behave like Kipling heroes, in the best tradition of greater breeds within the law" (492). Their tragic testimonials are the signs of suffering they display as they negotiate with each other over a damage-limitation exercise.

In the last chapters of the novel, it is obvious that each leader is boxed in by the ideological assumptions of his respective military establishment as much as by the sheer momentum of events, and, here, the novel's principal irony emerges. Again and again, gaps open between expectations and actuality, especially once a technical state of war exists between the two superpowers. The constant references to World War II give us a measure of scale (the destructive potential of the new bombs) and a series of bearings from other depictions of warfare, but then an important intertextual reference to *The Naked and the Dead* signals a crucial difference. A pilot reflects on his crew: "No good war novel here. The whole damn crew is Anglo-Saxon. What we should have is a Jew in it and an Italian to give colour" (137). But the new system of selection ensures uniformity and thus wipes out one staple source of novelistic interest. Furthermore, the commander is aware of his own historical demise—that is, aware that bombers are on the verge of obsolescence to be replaced by ICBMs. If the analogy with World War II is precarious, it collapses completely in the final chapters because the US war room is directing Russian pilots how to bring down US bombers. This reversal ironically blocks the patriotic responses of the Americans and shows their military machine being turned against itself. The crowning irony comes in the denouement when US aircraft drop H-bombs on New York.

It was a measure of the public interest in *Fail-Safe* that in 1963 Sidney Hook published a book-length review of the novel. *The Fail-Safe Fallacy* sets out to refute what Hook sees as a "conjunction of unrelated improbabilities" (11), even though the director of MIT had confirmed that such a sequence of events was quite possible. Hook rejects in turn all the technical elements of this sequence and complains that the main danger is human not mechanical. For that reason he finds Peter George's *Red Alert* (1958; later to form the base-text for *Dr. Strangelove*) "more intelligent." In contrast, *Fail-Safe* was positively dangerous

because its "alarmist and hysteria-producing picture" (19) could increase the already evident mood of political defeatism in the US. Nor was Hook any too impressed by the characterization. The US military was presented as "inhuman" and "fanatical," Grotteschele was a monstrous travesty, and Krushchev was glorified as a "noble Roman senator" (26). On the first of these characterizations, Hook was simply wrong. General Black, for instance, is a key figure in the humanizing direction of the action. In the other areas, Hook's general approach is to measure the novel against actuality without doing any justice to the novel's representational procedures. Whereas Hook exudes confidence in the US defense system, Burdick and Wheeler question such confidence as a kind of hubris, a pride in power which is symbolically brought into question by a mechanical fault. The novel replaces a calculation of casualties by numbers with individual victims known to the operating authorities as a means of reminding the reader of the potential human toll any nuclear explosion would take. There is no record of the widespread defeatism predicted by Hook; on the other hand, there is evidence that the US military tightened up its *fail-safe* procedures after the novel was published. Not surprisingly, one review took Hook to task for the patent absurdity of denying the possibility of mechanical failure and then combining this dogma with a blinkered anti-Communism, an "advocacy of policy by ultimatum" (APA 19). Hook does, though, pay back-handed tribute to Burdick and Wheeler's novel in his review by placing the book within a new politically engaged genre: "There was a time when the themes of science fiction in novel and cinema were pure fantasies. Today a new genre has developed which prides itself on its concern with important and grim truths underlying the fictional detail" (32). Within this new genre of engaged speculative fiction, *Fail-Safe* occupies a key position for its exploration of potential weaknesses in US defense policy and its dramatization of the imminent danger of nuclear accident.

Although Burdick and Wheeler pack *Fail-Safe* with specific technical and political data to situate the novel within a critical period of the Cold War, this does not mean the novel has become a historical curiosity now that the Cold War has ended. Burdick and Wheeler address a number of issues which remain pertinent.

There persists, of course, the question of public knowledge about the US defense system. In a draft introduction they state: "we wish only to call attention to a reality of present day life which is little known to the American public" (4). Nineteenth-century novels would take their projected reader into socially unfamiliar areas. Burdick and Wheeler follow exactly the same strategy in the military and political domains, and, in the process, dramatize the vulnerability of the military to political dissent and its dependence on strong leadership. Similar points were made by the journalists Fletcher Knebel and Charles Bailey II in their 1962 novel, *Seven Days in May*, which described an attempted coup by the US military. Burdick and Wheeler, and, for that matter, all the novelists who dealt with nuclear holocaust, were writing out of a technological situation as well as a political one. For the first time in history mankind possessed the means, it was feared, of destroying all life on the planet. Although Herman Kahn argued that even the worst-case scenario would not have this result, inevitably the stakes in military action were massively raised.

Fail-Safe demonstrates not only the need for rational communication with an enemy, but also a conviction that such communication is possible. It becomes therefore a matter of some consolation that the Russian defense system is perceived as a mirror image of the American one. The similar avenues of communication and the chain of command promise the ability to limit confrontation. And yet, with the end of the Cold War, a monolithic nuclear threat may have disappeared, but nuclear weapons still exist. The unified Soviet system has splintered into that of three nation-states possessing nuclear weapons, and the threat of rogue nuclear attack from other areas of the globe has, if anything, increased—a situation which takes us to the last major area of concern in *Fail-Safe*, namely, how far the US military is in command of its own procedures. The term "man-machine" is in some ways the most important in *Fail-Safe* because the term connotes a smooth interaction between military personnel and hardware. Like other novels of this period, *Red Alert*, *Level 7*, *Dr. Strangelove*, *The Bedford Incident*, for example, *Fail-Safe* concentrates not on an *external* aggressor, specified or not, but on the suspect, potentially unreliable interaction between man and

machine *within* the US defence system. The main historical question is the same in all of these novels: given the massive postwar build-up of the US defence capability, what dangers lurk within the system? How real is the possibility of a war triggered by human or technical error? The East-West nuclear confrontation might have been removed, but the potential internal danger remains. □

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