



AMERICAN ENTERPRISE INSTITUTE

FOR PUBLIC POLICY RESEARCH

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2 February 1978

Admiral Elmo R. Zumwalt, USN (ret.)
4043 41st Street North
Arlington, Virginia 22207

Dear Admiral Zumwalt:

Enclosed is the edited version of your remarks at the Seapowers Conference. We would appreciate your early attention to making any corrections and returning the corrected manuscript to us.

Sincerely,

DALE R. TAHTINEN
Assistant Director of Foreign
and Defense Policy Studies

enclosure

*Good job of straightening out El
more badly garbled syntax of a
long lifetime*

Z

Mailed to Tahtinen

2/7/78

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1 (Applause.)

2 MR. HESSMAN: Thank you, Carl.

3 We'll take about a ten-minute break and we will

4 adhere to that ten minutes, because we have three very

5 interesting commentators and not too much time. Ten minutes,

6 please.

7 (Whereupon, a short recess was taken.)

8 MR. HESSMAN: The first of our discussants this afternoon,

9 Admiral Elmo R., "Bud," Zumwalt, former Chief of Naval Operations,

10 has been accurately described as the man who changed the

11 U. S. Navy.

12 He is the person who truly does need no introduction.

13 I will start out, though, with one comment, one recommendation,

14 that you read his book "On Watch". I think it's an excellent

15 book, and it's a very honest book; one that originally, when

16 it came out during the Senate race, I thought was a political

17 campaign book. It was not. It's a very honest book; one

18 which helps us all understand this critical era that we're

19 living through. . . .

20 I've asked each of the discussants to take approxi-

21 mately five to ten minutes, following which we will have

22 very brief commentary from the individual speakers, and then,

23 time permitting, questions from the audience.

24 Admiral Zumwalt.

25 (Applause.)

Elmo R. Zumwalt

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Article starts here

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1 ADMIRAL ZUMWALT: Under the infinite authority that accrues
2 to any speaker, once he has seized the pulpit, what I plan
3 to do is to make a few comments that deal with the frame of
4 reference within which I think the papers which you have
5 heard today ought to be judged. I found them all very thought-
6 ful and very well done.

7 With regard to the energy situation, which has
8 occupied much of our minds, and John Moore's very thoughtful
9 comments about the changes in the nature of ships, I think
10 it's important what he had to say. I think it's important
11 to be aware that, ^{currently} the last time I looked, the energy usage
12 ^{of} by the Department of Defense ^{is} was just ^{4.5} 4 1/2 percent of what
13 the nation uses, and of that, only one-third, or ^{1.5} 1 1/2 percent,
14 is used by the Navy, and of that, only one-half is used by
15 ships, and the other half by aviation.

16 ^{the fleet uses a} So, you're talking about a very, very modest frac-
17 tion of the nation's energy requirement, ^{This is} and that's a consider-
18 ation within which the overall discussion ^{of} with regard to
19 nuclear power and other kinds of power certainly has to be
20 judged. Obviously, the country will use the energy that it
21 has to use for its ships in a crisis, and ^{we} will put on sweaters
22 and do whatever else we have to do. [^] But ^{this}

23 That ^{not} doesn't speak to the long-term situation, there,
24 I fully agree that ^{we} ^{will} are going to see the hydrogenation of
25 coal, and, in the long-term, other forms of energy ^{will} take over.

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1 No discussion of energy should fail to deal with
 2 the long-term consequences of ^{running out} ~~the using up~~ of the oil with
 3 regard to the strategic places on the globe. The Middle
 4 East, ^{specifically} today, ^{is} the Persian Gulf, ^{are} of critical importance. ^{today}
 5 ^{By} In John Moore's year 2015, ^{it} they will be probably relatively
 6 unimportant, and there will be a period when suddenly what
 7 has been the crisis center of the globe will cease to be ~~that~~
 8 ~~And those~~ ^{that} nations which are today, in a position practically
 9 to dictate, will be surviving ^{on} what they have built for
 10 themselves in the way of infrastructure, ^{they will again rely} and somewhat, again,
 11 reliant on the industrial world.

12 With regard to the long-term sources of energy,
 13 ^{highly industrialized nations will} ~~as they begin to turn into~~ the hydrogenation of coal, into
 14 ^{nuclear} the fusion, ^{and} ~~type of source,~~ into the other long-term and
 15 exotic forms of fuel, ~~these nations which are highly indus-~~
 16 ~~trialized will,~~ instead of being dependent ^{on} on overseas areas,
 17 ^{these nations will} increasingly be their own sources of energy.

18 Certainly, the United States, Canada, and Australia,
 19 which have today the overwhelming majority of food surplus
 20 and ~~which sit astride~~ the overwhelming fraction of the free
 21 world's coal, ^{These nations} have a combination that ^{when} can be put together,
 22 that represents a very important element of power, and the
 23 existence of that energy supply, at our end of the supply
 24 line, changes the overall nature of ~~the~~ weapons and weapons
 25 systems about ^{we} which one ought to be thinking.



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1 Similarly, ^{we} one needs to, I think, pay attention to
 2 those areas of the world which ^{that} ~~in the year~~ 2000 ^{by} and ~~beyond~~ ^{or later}
 3 are likely to have joined the industrial part of the globe
 4 ^{will have an} and the impact ^{on} that they will have with regard to the overall
 5 strategies within which we consider these problems. ~~nations~~
 6 such as Brazil, which are clearly ^{in this} of that category.

7 There is another area that I ^{we have} think ~~one has to~~ draw
 8 back to and examine. ~~If one examines the history of mankind~~
 9 ~~Over these~~ last 500 years, ~~what mankind has been doing is~~
 10 moving from the European continent across the surface of the
 11 seas, to the civilization ~~of the entire Western Hemisphere~~ ^{and}
 12 the African continent, and now we see, [#] at an ever accelerating
 13 exponential rate, ^{these civilizations} ~~man~~ moving ^{again} back together under the sea.
 14 We are just at the leading edge of ^{this movement} that ~~with what we're doing~~
 15 in offshore exploration, and ^a we're beginning to move from
 16 the hunting of fish and food in the sea, to the farming of
 17 fish and food in the sea.

18 Deep-sea drilling projects on the oceanbed, in
 19 ever deeper water, are obviously the way of the future, and
 20 the problems of navies and how they ^{will} ~~are going to~~ deal with
 21 both the policing and the defense of ^{such projects} that kind of a situation
 22 ~~are things~~ ^{will} that have to be considered when you ~~are~~ examining
 23 ^{the} that generation of ships that will ~~continue to~~ survive in
 24 ^{until} the ~~year~~ 2015.

25 The whole question of nuclear proliferation and how

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1 that changes the defense situation of the world, as ^{smaller} ~~Mickey~~
 2 ~~Mouse~~ nations acquire the capability to build nuclear weapons,
 3 ~~is something that needs~~ ^{should} to concern us all in making these
 4 decisions.

5 ~~And then~~ ^{the question of} of perhaps overriding consequence, is
 6 which of the two rival views for organization of the globe
 7 will prevail. Will the Soviet view, ~~that~~ ruthless, tyrannical,
 8 power-seeking ~~view~~ prevail? or will the blitheness of man's
 9 true free spirit prevail? and how will ~~the nature of~~ that
 10 struggle be played out in an era ^{future} when we have not yet learned
 11 as a nation, to focus on what ~~it is our enemy is~~ telling
 12 us he intends to do?

13 When one examines naval systems, it's ^{is} very important,
 14 ~~I think~~, constantly to keep in mind whether we're looking
 15 at a peacekeeping situation or at a war ~~type of~~ situation.
 16 The problem that we have in bringing power to bear in peace-
 17 time is a completely different ^{from} ~~one than~~ the problem of winning
 18 a war with the Soviet Union at sea, once that war breaks out.

19 ~~And~~ all that we have done in the past needs con-
 20 stantly to be re-examined in that regard. Nuclear energy
 21 is the first subject that comes to mind ^{No one} ~~when you do so.~~ I
 22 ~~don't know of anyone who~~ disagrees that nuclear power is more
 23 effective than conventional power. ^{No one} ~~I don't know of anyone~~
 24 ~~who~~ disagrees that nuclear power is more costly than conven-
 25 tional power in ships. →

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1 → The issue has always been whether the additional
 2 cost ~~was worth it, in terms of~~ ^{is warranted by} the additional effectiveness.
 3 Clearly, ^{is justified} for submarines, ^{the} it's ~~of~~ overriding conclusion ^{is} that ~~the~~
 4 ~~it is.~~ ~~Clearly,~~ ~~with~~ ~~some~~ ~~nuclear~~ ~~carriers~~ ~~and~~ ~~the~~ ~~escorts,~~
 5 ~~to go with them, it has been important.~~

6 Clearly, ^{the number of} you reach a level where the things that
 7 ~~you give up,~~ ^{must be in} ^{may outweigh} in terms of the numbers required, ~~are greater~~
 8 ~~than~~ the gains ~~you make for~~ ⁱⁿ the individual effectiveness of
 9 a unit, and ~~that's something that~~ has constantly to be
 10 examined.

11 ~~We are in an era, I think -- and much of this has~~
 12 ~~been brought out in the papers -- where~~ the increasing capa-
 13 bility of both sides for global command and control and sur-
 14 veillance and reconnaissance, has changed the nature of
 15 weapons systems.

16 ~~The increasing lethality of even conventional~~
 17 ~~explosives has changed the nature,~~ ^{of sea warfare} and, therefore, when one
 18 ~~examines how it is that we're to do~~ the job of sea control
 19 ~~and projection~~ ^{is} ^{ed} ^{to} in the years ahead, ~~it seems to me quite clear~~
 20 ~~that~~ we are driven inevitably toward larger numbers of smaller
 21 and more cost-effective platforms.

22 ~~I view~~ the present CNO's decision to head into the
 23 CVV ^{is} as a good one, ~~a decision which~~ ^{it} hedges in view of the
 24 uncertainty as to whether V/STOL will come along rapidly
 25 enough. I believe that ~~inevitably it will be followed,~~ in

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1 the more distant future, ~~by~~ still smaller platforms ^{and} from which
2 we will see true V/STOL operations.

3 ~~I believe that~~ ^{later} in the far years of this century
4 and in the early years of the next century, ^{we} you will see
5 those V/STOL aircraft increasingly in the role of surveillance,
6 reconnaissance, and command and control, ~~and that the~~ cruise
7 missiles and remotely piloted vehicles will take over as the
8 lethal end of the system.

9 ~~I believe that~~ we have ~~got~~ to take a lesson from
10 our enemy, the Soviet Union. ~~I believe~~ we have ~~got~~ to be
11 aware of the much more effective job ~~that~~ they are doing,
12 of tying together all of the platforms available to them,
13 with their total and rather brutal control of the entire
14 peaceful economy, ^{including, for example,} of the Soviet Union, and their ability to
15 ^{send} ~~march~~ the Merchant Marine off in the directions that Admiral
16 Gorshkov desires, ~~and so forth.~~

17 We have a vast and untapped field of opportunity,
18 with regard to our ability to group the total force of this
19 country ^{the} Army, ^{the} Navy, ^{the} Air Force, ^{the} Coast Guard, ^{the} Marine, and ^{the}
20 Merchant Marine ~~systems~~ ^{and} the enemy, with regard to
21 ^{thus} accomplishing that, has always been the bureaucracy, which
22 defeats any such effort ~~to do so.~~

23 (Until there is someone who has the authority to
24 bridge the interagency bureaucratic problem, we will not begin
25 to organize ~~in a way~~ to use our total power. It ~~is~~ ^{is} is



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1 unconscionable to me that merchant ships which today have
2 the capability, with just a ^{few} little structural changing, to
3 be anti-submarine platforms, to be V/STOL platforms or
4 helicopter platforms, to carry towed and passive arrays, to
5 carry the anti-submarine or anti-ship rockets, are not being
6 so prepared.

7 We have ^{need} got to have increasing numbers of ships at
8 sea, ^{because of} for our increasing dependence on overseas produce, and
9 we ^{should} ought to be exploiting ^{our ships} them at the margin, to develop the
10 capability to control the sea, or, ~~indeed~~, more accurately
11 ~~put~~, to defend those platforms ^{by means of} from the most cost-effective
12 platform of all, themselves.

13 ~~I think that~~ Beyond the bureaucratic interface, about
14 which I have ^{we have} spoken, ~~the~~ two most significant problems, that
15 we have to overcome are, ^{there is} first, the reluctance of ^{our} leadership,
16 in general, accurately to ^{inform} put out to the American public
17 ^{about} what ~~it is~~ the Soviet Union is up to, what they say, ^{it is} they are
18 up to, ^{and its} what their actions demonstrate ^{it is} they are up to, -- and
19 I have an earthshaking conclusion for you, ^{the} and that is, that
20 we ^{cannot allow} are never going to do the job, as long as we permit the
21 Soviet Union to outspend us by 60 percent in the strategic
22 fields and 50 percent in the conventional fields, no matter
23 how optimal we become.)

24 We ^{will} are simply going to have to begin to match ^{that} this
25 nation, which, with 60 percent of our gross national product,



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1 continues to outspend us and, within that matching, ^{we must} seek,
2 through our greater efficiency, to ~~be able to~~ regain the
3 deterrence capability ~~that~~ we have given up in these last
4 five or six years.

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5 ~~Thank you.~~

6 ~~(Applause.)~~

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7 MR. HESSMAN: Among the best informed people in Washington
8 and, certainly, among the best writers, are people whose
9 by-lines we never see, members of Congressional staffs
10 and, particularly, people associated with the Congressional
11 Research Service. Any member of Congress will tell you they
12 could do nothing without them, and they are often the real
13 experts on the Hill.

14 I think Duz Kaneer mentioned the "Third Branch
15 of Government". It's a title they do not want, but it is
16 being foisted on them by the media. It is probably well
17 deserved.

18 They are people who have great influence and great
19 good influence. A member of the Congressional Research Ser-
20 vice with us today, Alva Bowen, will be our next discussant.
21 A career Naval officer, Al retired in 1975. Since that time,
22 he has been the Naval Specialist with the Congressional
23 Research Service, so the one that we really count on to get
24 the right information to Congress.

25 Al Bowen.

(Applause.)

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1 MR. BOWEN: I guess after that introduction, I'd better issue
2 a disclaimer that the things you are about to hear do not
3 represent the opinion of the Congressional Research Service.

4 Admiral Trost indicates an average life expectancy
5 of some 27 years, for ships of the U. S. fleet. If we apply
6 that 27 years to the Navy of today, almost every ship in the
7 Navy, even the newest ones, will be either dropped from the
8 active list, or on their last leg, by the year 2004. Therefore,
9 what we've been talking about for the last two days, is
10 replacing the entire active fleet with something, when we're
11 addressing the 21st Century.

12 I make that point because most of us, in our every-
13 day work, are stuck with a large inventory of ships that are
14 too young to throw away and trying to make any kind of
15 significant change in the fleet's composition during a par-
16 ticular duty assignment appears well nigh impossible.

17 By looking ahead 25 to 30 years, there seems to be
18 some possibility for changing things, although the options
19 are not nearly as wide open as it may seem. There is a
20 five- to seven-year building period for the ship, and that's
21 after it's authorized and the funds are appropriated, which
22 may be two or three years after it was thought of. But in
23 addition to that, there is usually a seven or more year
24 research and development time for the weapons system and
25 other key components that go in that ship.

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1 Ships that are authorized and funded this year
2 will have technology in them, then, that started in develop-
3 ment back in 1970 or earlier. In fact, if we want to be
4 specific, AEGIS, which was authorized to go into the DDG-47
5 this year, was a 1967 development; it started in R&D.

6 When the ships delivered in 1984, later then, that
7 technology is going to be 14, 15 or 16 years old. In addition,
8 ship replacement is, or should be, a continuous kind of an
9 operation. We can't afford to wait for technology to be
10 developed. We have to go with what's in the pipeline today.

11 These are constraints on just what can happen and
12 how much room for maneuver you have, in designing your Navy
13 of the 21st Century. I think this explains why many of the
14 conclusions by the authors of the papers that have been pre-
15 sented in this panel show that the fleet of the 21st Century
16 is going to have many of the same characteristics of the fleet
17 that's in being today. I think that reflects their knowledge
18 of what's in the R&D pipeline.

19 While there are some things in development that
20 will have a radical or revolutionary effect on the fleet. if
21 they prove out, there are a lot of other things, a lot more
22 things, that are only incremental improvements over what we
23 have now, and our authors predict that more of that kind of
24 development will be made and make it into production than
25 the revolutionary kind.

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1 Still, I think a long look ahead is necessary, if
2 we are to guide technology toward the more revolutionary
3 kind of gains.

4 I enjoyed reading the three papers that were
5 presented today, very much, and I certainly commend them to
6 be read by anyone who is interested in this subject, because
7 they are lucid and, believe me, the presenters left a lot
8 out because of time constraints.

9 Turning to the papers, themselves, Admiral Trost
10 presents a U. S. Navy that is structured in size for a forward
11 strategy and the strategy will probably not change, according
12 to his judgment -- and I concur in that.

13 The Navy mission to conduct sustained warfare at
14 sea won't change either. He says, however, in the paper,
15 that the value and the role of the Navy is well understood,
16 and that the real argument is the size and structure of the
17 fleet. And I agree with that finding, insofar as this audience
18 here is concerned, but I would like to put in a pitch here,
19 as Secretary Warner did last night, and Congressman Bennett,
20 that that is not a universally true statement, I don't believe;
21 that there are a lot of people in the United States, in the
22 public, who don't yet know or agree what the value and role
23 of the Navy is, and all of us must continue to push it, because
24 it is as important as we've been saying to each other, and
25 this is a missionary work that has to be done.

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1 Admiral Trost's size and structure criteria was to
 2 develop a fleet that would defeat the worst case threat. He
 3 says fiscal constraints prevent this, and then he dismisses
 4 the alternative to size the fleet for the most probable task,
 5 which is crisis management, as being not acceptable because
 6 it could lose us a real war and might prompt adventurism
 7 by our adversaries. In this, I think he is right.

8 We must be able to control the sea lines of com-
 9 munication, conduct amphibious and air strikes in more than
 10 one theater after sea control is achieved. And the fleet
 11 that he has undertaken to structure in his paper, is designed
 12 to do that.

13 He notes the carrier is the key ship and, of course,
 14 it is. He talks about a planned Hi-Lo carrier force of eight
 15 conventionally-powered and four nuclear-powered carriers at
 16 the top, some number of CVVs being built later on. No talk
 17 about a VSS.

18 I have one comment on that part of it. Those CVVs
 19 or those CVNs and CVs are going to run out by the year 2000,
 20 or soon after that. So, this is a stop-gap, it isn't a
 21 decision; which brings us to the key issue that is talked
 22 about in the paper, and that is the V/STOL program.

23 Now, Admiral Trost points out that the V/STOL pro-
 24 gram may eventually replace conventional takeoff and landing
 25 aircraft as sea-based air, but the program is structured to



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1 provide checkpoints and alternatives that would allow us
2 to return to conventional takeoff and landing types of air-
3 craft, if that becomes desirable or necessary.

4 The land-based air option he also discusses,
5 not as an either/or proposition, but points out that the land-
6 based option competes with V/STOL for funds. I think some-
7 body had an idea this morning that it didn't have to, and
8 I'd like to bring that up again and just note it in passing.

9 There are other places where the money could come
10 from. Bill Lind said it could even come from the Army. The
11 future Navy, in Admiral Trost's paper, consists of a main
12 battle fleet centered around aircraft carriers, replenishment
13 groups, amphibious ready groups and escort forces for logistic
14 shipping. As he said, these are the same basic elements that
15 we have in the fleet today.

16 He points out that just because we have the same
17 basic fleet element, it doesn't mean that the ships are going
18 to look like the ones of today, or that they will be configured
19 that way. But if you accept these other things that I have
20 been outlining, then you are driven to this-kind of a Navy.

21 Finally, he points out a fourth level of between
22 500 and 600 ships, as probably where we are going to end up
23 by the 1990s. Reuven Leopold's paper gave us a very useful
24 review of hull technology. I'm sorry he didn't have time to
25 read it all, but I really do urge you to take the time to read
it.

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1 He points out, and we've all known this, that the
 2 displacement hull is probably up against the stops, as far
 3 as being able to push it any faster. He talks of the SWATH
 4 as being promising for motion, to overcome motion at sea.
 5 He makes a conclusion that the displacement hull is going to
 6 dominate the 21st Century, as it has in years gone by.

7 No 100-knot Navy, he said, although there will be
 8 applications for the higher performance ships, according
 9 to his paper. I had a comment on that part of the paper.

10 It seems to me the Navy is concentrating almost
 11 entirely on small ships, in these advance ship sizes -- these
 12 kind of advance ships -- and I wonder why we are not trying
 13 to look at a 10- or 12,000-ton surface-effect ship, for
 14 example, Reuven. Maybe you could speak to that when you get
 15 a chance.

16 Propulsion -- I've found it very interesting that
 17 the gas turbine is going to be the workhorse of the fleet,
 18 in view of Title 8. You might want to address that, also.

19 I was pleased to know the superconductors are coming
 20 along as well as they seem to be. They certainly will provide
 21 a lot more flexibility in our ship design than we have had
 22 before, not only in the ship design but also in the manpower
 23 and manning, which I'll get to a little bit later.

24 And the combined power plant approaches that were
 25 shown in the paper are promising, particularly the gas and



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1 steam one, which will really get your pounds of fuel-per-
2 hour down.

3 The innovations in combat systems -- and there were
4 a lot of them that he talked about -- that most appeal to me
5 is the modular replacement concept, which enables us to re-
6 configure in a very, very short time, and will permit us to
7 finally break the bonds of this burden we've had of having
8 a seven or eight year R&D cycle for weapons systems, that
9 we have to first pass through before we get our ship hull.

10 If it turns out that we can replace the weapons
11 system in six weeks' time and we can develop a new one as
12 often as we'd like, slap it on board and keep going, in
13 addition to the other advantages that Reuven claimed.

14 I've saved manpower for the last because it seems
15 to me that in the conclusions on manpower, we are being kind
16 of pessimistic. Our Merchant Marine is doing better than that.
17 We are down to a big oil tanker that could steam around with
18 no more than seven people on board. I cannot see why we have
19 to have 150 men in a Navy escort vessel. Perhaps you'd like
20 to address that one in a little bit more detail, if you get
21 a chance.

22 Turning to Dave Kassing's paper, I think this paper
23 contributes a very useful analysis of the problems of defending
24 against nuclear attack. This is something that it is awfully
25 hard to find anybody who has written on. So, if you don't get



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1 anything else, don't have time to read anything else, it's
2 worth your while to get that paper and see what Dave has to
3 say about nuclear attack.

4 He emphasizes the -- well, he shows the difference
5 in force composition and configuration that will have to
6 happen, if you decide that you really are going to worry
7 about that as a key consideration, such as emphasizing the
8 killing of the weapons carrier rather than defeating the
9 weapons after they've been launched, which gets you into the
10 very long-range missile, long-range airplanes, land-based
11 air, and a much better surveillance system than we've got
12 right now, more submarines, a lot more smaller units and
13 dispersed formation.

14 The other thing that I found particularly inter-
15 esting in that paper, which I offer for you, is the distinc-
16 tion he makes between what happens on the D-Day shootout and
17 what happens later on. We all know about this. We think
18 about it every once in a while. Admiral Zumwalt just pointed
19 it out again, the difference between peacekeeping and the
20 war after it's well underway.

21 But what happens on that day is not the same thing
22 and the kinds of ships and the way you employ them are dif-
23 ferent than what happens later on.

24 I think the key question, as we pointed out before,
25 is how the Navy, in the years to come, is going to provide

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1 for the continuance of the capability that is now resident
2 in our sea-based air.

3 The Navy is, I think, in a transition, someday,
4 to the unmanned weapon and the remote, pilotless vehicle. I
5 don't think that's going to happen this afternoon. Certainly,
6 all of the testimony of the last two days points to the fact
7 that that kind of a trend, if it's going on at all, has got
8 a long way to go.

9 We have passed the strategic mission from naval
10 air to the SSBN and fleet ballistic missiles. The President
11 has just cancelled the B-1 in favor of the cruise missile.
12 It's the same kind of decision, providing a standoff capability
13 for the airplane. So, this is the kind of a trend that's
14 been going on.

15 But how you get there from here is something else,
16 again, and what is really before us is whether the V/STOL is
17 a necessary transition step. I would like to make a couple
18 of comments about V/STOL.

19 As has come to me from not only the paper that I
20 read, but also the comments of the last couple of days, taking
21 -- accepting V/STOL does not just mean taking off the A-6
22 or the F-14 and putting in V/STOL in its place. It's a shift
23 of the whole concept of how we fight the navies.

24 The V/STOL, as has been pointed out today, will
25 always have a delta capability, be less capable than the

