

Unclassified Statement of

Lieutenant General Ronald T. Kadish, USAF

Director, Missile Defense Agency

Before the

**Senate Armed Services Committee
Strategic Forces Subcommittee**

Regarding the

**Reorganization of
The Missile Defense Program**

Wednesday, March 13, 2002

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Biography

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Lieutenant General Ronald T. Kadish is the director of the Missile Defense Agency (MDA), Office of the Secretary of Defense, Pentagon, Washington, DC. The MDA is Presidentially-chartered and mandated by Congress to acquire highly effective ballistic missile defense systems for forward-deployed and expeditionary elements of the U.S. Armed Forces. Additionally, MDA will develop options, and if directed, acquire systems for ballistic missile defense of the United States. As director, General Kadish is the Acquisition Executive for all Ballistic Missile Defense systems and programs.



The general entered the Air Force in 1970 after graduating from the Reserve Officer Training Corps program at St. Joseph's University. He was the program director for the F-15, F-16 and C-17 System Program offices, as well as director for manufacturing and quality assurance for the B-1B System Program Office. He is a senior pilot with more than 2,500 flying hours, primarily in the C-130. Before assuming his current position, he was commander, Electronic Systems Center, Air Force Materiel Command, Hanscom Air Force Base, MA. He was responsible for the Air Force's Center of Excellence for command and control systems, handling more than \$3 billion in programs annually.

EDUCATION:

1970 Bachelor of science degree in chemistry, St. Joseph's University, Philadelphia

1975 Master's degree in business administration, University of Utah

1975 Squadron Officer School, Maxwell Air Force Base, AL.

1981 Distinguished graduate, Air Command and Staff College, Maxwell Air Force Base, AL.

1988 Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, DC

1990 Defense Systems Management College, Fort Belvoir, VA.

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ASSIGNMENTS:

1. June 1970 - June 1971, student, undergraduate pilot training, Vance AFB, OK
2. June 1971 - June 1974, C-130E pilot and instructor pilot, 62nd Tactical Airlift Squadron, Little Rock Air Force Base, AR
3. June 1974 - June 1976, wing operations staff officer, 314th Tactical Airlift Wing, Little Rock Air Force Base, AR
4. June 1976 - June 1977, Air Force Institute of Technology's Education-with-Industry, Vought Corp., Dallas
5. July 1977 - August 1980, subsystem co-production officer, F-16 System Program Office, Aeronautical Systems Division, Wright-Patterson Air Force Base, OH
6. August 1980 - June 1981, student, Air Command and Staff College, Maxwell Air Force Base, AL
7. June 1981 - March 1982, C-130E instructor pilot, 37th Tactical Airlift Squadron, Rhein-Main Air Base, West Germany
8. April 1982 - January 1983, wing and base chief, aircrew standardization and evaluation division, 435th Tactical Airlift Wing, Rhein-Main Air Base, West Germany
9. January 1983 - July 1984, operations officer, 37th Tactical Airlift Squadron, Rhein-Main Air Base, West Germany
10. July 1984 - September 1985, director for manufacturing and quality assurance, B-1B System Program Office, aeronautical systems division, Wright-Patterson AFB, OH
11. September 1985 - July 1987, executive to the commander, Aeronautical Systems Division, Wright-Patterson Air Force Base, OH
12. July 1987 - June 1988, Student, Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, DC
13. June 1988 - July 1989, chief, program integration division, Office of the Secretary of the Air Force for Acquisition, Washington, DC
14. July 1989 - May 1990, military assistant to the Assistant Secretary of the Air Force for Acquisition, Office of the Secretary of the Air Force for Acquisition, Washington, DC.
15. May 1990 - September 1990, student, Defense Systems Management College, Fort Belvoir, VA
16. September 1990 - August 1992, F-15 program director, Aeronautical Systems Center, Wright-Patterson Air Force Base, OH
17. August 1992 - September 1993, F-16 program director, Aeronautical Systems Center, Wright-Patterson Air Force Base, OH
18. October 1993 - August 1996, program director for the C-17 System Program Office, Aeronautical Systems Center, Wright-Patterson Air Force Base, OH
19. August 1996 – June 1999, commander, Electronic Systems Center, Hanscom Air Force Base, MA
20. June 1999 – present, director, Missile Defense Agency (MDA), Office of the Secretary of Defense, Pentagon, Washington, DC

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FLIGHT INFORMATION:

Rating: Senior pilot

Flight hours: More than 2,500

Aircraft flown: C-130, T-37, T-39, F-16, F-15, C-17

MAJOR AWARDS AND DECORATIONS:

Defense Distinguished Service Medal

Legion of Merit

Meritorious Service Medal with three oak leaf clusters

Air Medal

Air Force Commendation Medal with two oak leaf clusters

Air Force Outstanding Unit Award

Air Force Organizational Excellence Award with three oak leaf clusters

Combat Readiness Medal

Air Force Recognition Medal

National Defense Service Medal with service star

Air Force Overseas Ribbon - Long

Air Force Longevity Service Award Ribbon with six oak leaf clusters

Small Arms Expert Marksmanship Ribbon

Air Force Training Ribbon

EFFECTIVE DATES OF PROMOTION:

Second Lieutenant June 3, 1970

First Lieutenant December 14, 1971

Captain December 14, 1973

Major November 28, 1979

Lieutenant Colonel March 1, 1985

Colonel September 1, 1989

Brigadier General September 1, 1993

Major General October 1, 1995

Lieutenant General August 16, 1996

(Current as of January 2002)

Lieutenant General Ronald T. Kadish, USAF
Director, Missile Defense Agency
On the Reorganization of the Missile Defense Program
Before the
Senate Armed Services Committee
Strategic Forces Subcommittee

Good afternoon, Mr. Chairman, Members of the Committee. It is a pleasure to appear before you today to testify on the recent establishment of the Missile Defense Agency and reorganization of the Missile Defense Program. I welcome this opportunity to describe our reorganization.

On January 2nd of this year, the Secretary of Defense redesignated the Ballistic Missile Defense Organization as the Missile Defense Agency and changed the responsibilities and authorities of the Director. Your staff is familiar with the Secretary's directive.

The Secretary gave the Agency—and me as Director—new priorities and direction, and expanded responsibilities and authority to execute the missile defense program. Some of these new authorities differ from traditional Departmental processes, but all of them are within the Secretary's existing statutory powers. Our activities will be just as apparent, and our accountability to you and the American people just as assured, as they have been in the past. We are developing a detailed plan by April to implement the Secretary's guidance. We believe that the changes we are instituting will provide for a better structure to manage and execute the missile defense program and will enhance our performance as responsible stewards of the resources entrusted to us.

Program Direction

The Secretary spelled out four top priorities for missile defense. They are:

- First, to defend the United States against limited missile attack, as well as to defend U.S. deployed forces, allies, and friends;
- Second, to employ a Ballistic Missile Defense (BMD) System that layers defenses to intercept missiles in all phases of their flight against all ranges of threat;
- Third, to enable the Services to field elements of the overall BMD System as soon as practicable; and
- Fourth, to develop and test technologies, to use prototypes, and to test assets to provide early capability, if necessary, and to improve the effectiveness of deployed capability by inserting new technologies as they become available or when the threat warrants an accelerated capability.

The Secretary also provided specific objectives for the program, to:

- Establish a single program to develop an integrated system under a newly titled Missile Defense Agency (MDA);
- Assign the best and brightest people to this work;
- Apply a capability-based requirements process for missile defense; and
- Direct the MDA to develop the missile defense system and baseline the capability and configuration of its elements and the Military Departments to procure and provide for operation and support.

The Ballistic Missile Defense System

We are developing a single integrated BMD System to counter all ranges of ballistic missiles.

Let me clarify some of the terms we use. When we speak of one BMD System, we refer to the operational integration of all missile defense elements, including sensors, weapons, and battle management/command and control capabilities, regardless of which Service operates them. We speak in terms of three defense segments that categorize the capabilities to intercept a hostile missile during each phase of its flight: a Terminal Defense Segment, a Midcourse Defense Segment, and a Boost Defense Segment. We group sensors under a fourth segment.

Some of the terminology has changed. For example, the Ground-based Midcourse Defense, or GMD, replaces the former National Missile Defense designation as a better descriptor of what it is—a capability to destroy missiles in the midcourse phase of flight using a ground-based interceptor.

Each defense segment is made up of elements, which correspond roughly to the old Major Defense Acquisition Programs (MDAPs). Within the Midcourse Defense Segment, for example, GMD is an element, and within the Terminal Defense Segment, THAAD is an element. Below the element level, we have components—THAAD is an element, while its radar, for example, is a component.

In programmatic terms, we no longer speak of national or theater missile defense. Operationally, the terms can take on different meanings depending on where you live. The distinction between them made sense a decade ago, when we faced the stark difference between a Soviet ICBM threat and an Iraqi Scud. Now it no longer does. The same North Korean missile aimed at Japan could be a national threat to our ally, but a theater threat to us—unless it were

retargeted toward the United States, in which case it would become national again. Furthermore, at some point in time, a short range missile could threaten our homeland just as well as an ICBM could, if, say, it were launched from the sea off our coast.

Especially after September 11, from my point of view, we want to make sure that we are effective against all ranges of threats. It is a national decision as to where and when we deploy our capabilities. We face the complex task of integrating many elements, because the flight physics of the variety of missile speeds, trajectories, and the environments through which missiles travel preclude our having one defensive technology that can do it all.

Departmental Oversight

The Secretary has set up a formal oversight process for the missile defense program. As Director, I continue to report directly to the Under Secretary of Defense (Acquisition, Technology and Logistics). The Senior Executive Council, or SEC, chaired by the Deputy Secretary, provides executive oversight of the program. Permanent members are the Service Secretaries and the Under Secretary (AT&L). Other Department officials will be included as needed, depending on the subject at hand.

This Council conducts periodic formal and informal reviews of the program. I have already met with the Council six times since last summer, including several to provide formal briefings of our status and plans. Planned reviews include such topics as program plans, management approaches, test performance, system architecture, technological alternatives, basing options, and threat. The Council provides guidance regarding policy, planning, and programming; makes the decisions as to whether to stop, start, slow, or accelerate efforts; and approves recommendations on fielding elements of the system. This group demands high standards of accountability. You have seen some

of this recently regarding Department decisions to cancel the Navy Area Defense program and restructure SBIRS-Low.

Additionally, the Department has created a new, standing Missile Defense Support Group, the Chairman of which reports directly to the Under Secretary. This Support Group provides advice both to the Under Secretary and to me, as well as input to the SEC. It performs independent assessments, and is supported in turn by a working group. The members of the Support Group are all senior and all experienced in missile defense.

Why these changes? There are two major reasons. The first is to provide more direct and focused executive oversight and reporting. We need to reduce decision-making cycle time, and we are looking for real-time involvement. If we went through the normal Departmental processes, the reviews would be episodic, subject to individual program events or milestones, and there could be years between these events. Our new procedures provide for more frequent and more comprehensive oversight of the missile defense program than we currently have and can better respond to changing conditions and emerging events. They provide for more internal accountability at a more rapid pace than we have had in the past.

The second reason we have changed our processes is that existing Departmental procedures were designed to satisfy the needs of single Service acquisition. Even when the Department deals with very complex programs, such as the F-22, the DDG-21, or the Comanche attack helicopter, ultimately we are looking at one Service to operate the deployed system. Our acquisition procedures have been designed over time to provide oversight for that one Service. Very seldom have Service boundaries been crossed.

Missile defense is different. In missile defense, we have three Military Departments, the Joint Staff, and the warfighting Commanders-in-Chief, all deeply involved in providing the kind of layered defenses we need. Service boundaries are crossed from the start to provide for integration within the BMD system. Even at the operational level, no one Service will operate missile defenses. That is why the Missile Defense Agency was created in the first place, to pull all these strands together, regardless of whether the basing mode of any single element was on the ground, at sea, in the air, or in space. Oversight for the missile defense program under these circumstances requires a new approach. I can assure you the work on this approach has already been rigorous.

Let me describe some other features of the restructured program and processes, and then I will come back to the important issue of congressional oversight.

Capability-Based Acquisition

There appears to be confusion about what capability-based acquisition is. Some have interpreted this as doing away with requirements. That is not the case. We are not doing away with requirements. We are, however, changing how we derive, define, and deal with them.

Instead of developing systems to respond to a narrowly defined threat from a known adversary, we find we cannot know with confidence what specific adversary might pose what specific missile threat and when. Hence, as a starting point, we are looking at the broader range of capabilities an adversary might have in a given timeframe

and then developing defensive capabilities based on technological maturity in blocks that will evolve over time.

The traditional development process started with specific military requirements generated by the user and became formalized in the Operational Requirements Document, or ORD. This traditional ORD approach has generally served us well, especially in procurements involving well-known technologies, proven systems, sizeable production runs, and established operational experience. None of these yet exist in missile defense.

For us, the strengths of the traditional requirements generation process can also be its weaknesses. It is rigorous, but that very rigor translates into a lack of the flexibility needed to deal with unprecedented technology development. Requirements defined in ORDs are typically set many years before actual system deployment, and can often lead to less than optimum capability against a threat that exceeds the description specified earlier.

Furthermore, at the moment, we do not yet know all the technical approaches that will work best. Five years ago, we could not have foreseen, let alone written down, all the uses that define today's Internet. It would not be prudent to lock in our development path now and find out some years down the road that we have weakness in the system. This could come about because of an unexpected technical obstacle, because of some new development in the threat, or because we failed to exploit some practical technical innovation that we might otherwise have captured with our incremental acquisition approach.

Yet we always face the risk of being surprised by changes in the threat. Missile defense has perhaps more uncertainties in this regard than many other mission areas. We do not want to alter our baseline every time we recognize a change in the threat. Such changes could ripple through the program and likely cause significant delay and cost. So instead of a point threat, we are setting a wider range of boundaries for adversarial capabilities over time in defining our own needed capabilities. The baseline we set must be able to deal with surprises and changes in the threat. A capability-based approach allows us to adjust to those changes in ways that the traditional requirement-based approach does not.

These capability definitions act as formal requirements, with one key difference—they can be changed as necessary during the developmental stages to reflect changes in the threat or to take advantage of technical or engineering breakthroughs. Since they evolve in parallel with capabilities, they allow us to reduce cycle time, schedule risk, and cost risk.

While we are moving away from some of the rigidities of the past, we are not abandoning rigor in development. In my opinion, far from it. A capability-based approach provides for significant discipline. It is just guided by different mileposts. Instead of the traditional process where users define the requirement in great detail, then, subsequently, developers translate the requirements into specifications, we intend to do both at the same time. In so doing, we can accrue the same advantages that the commercial world enjoys.

We are bringing together users and developers under our Agency's lead—the warfighters, the Services, and industry. Together, all of them will have a continuous and constructive role in establishing the mission requirements for missile defenses, unlike that under the older process. The warfighters will not disengage after setting the requirements at the outset, and industry will not be brought in at the last moment—they will both be present from the start. This partnership will be continuous and remain vital throughout the whole development process. This focused, unbroken interaction will allow us to make more timely capability trades, explore a broader range of options, and upgrade our capabilities to keep them current.

The developmental goals drawn up by this interaction are periodically reassessed until a decision is made to capture them and fix the characteristics of each two-year block increment of capability. And that is our plan—to be able to field, when directed, an effective capability, proven through rigorous testing, in two-year blocks and to upgrade it incrementally and continually as the need arises. This aspect is called evolutionary acquisition.

In sum, capability-based acquisition is a flexible approach to the acquisition of complex systems, incorporating advanced technologies, that permits the early deployment of a limited but effective capability that can be progressively enhanced over time as needed. It provides for continuous warfighter involvement and disciplined development aimed at reducing cycle time. It stays relevant to the threat and remains technologically current. That is our vision for the capability-based approach and also how we intend to execute it.

This approach is not really new. Our nation has used it successfully in undertaking previously unprecedented technological endeavors. Among other programs, we used this approach for making the trade-offs and accelerating the schedule to develop the Polaris submarine-launched ballistic missile and the SR-71 reconnaissance aircraft.

And we are certainly familiar with upgrading systems over time. The B-52s that flew over Afghanistan last fall were far different aircraft than those that first rolled off the production lines five decades ago.

Program Management

As we changed our approach to development, we found we also had to change our approach to management. The program is moving from being element-centric to system-centric, and the transitions during the acquisition cycle are more complex, especially in the hand-off from development to production. Our program has entered a new phase, having moved from technology development to systems engineering and the very significant challenge of integrating many diverse elements, including battle management, into one BMD System. This management challenge is at least equal to our technical ones, and it is no less urgent.

This challenge of systems engineering is unprecedented because not only do we have thousands of individuals involved in hundreds of efforts at dozens of locations; but we also are dealing with cutting-edge technologies at varying levels of maturity; involving all Services and their doctrines; investigating four different basing modes; and making it all work together. The systems engineering task for the BMD System involves, among other aspects, developing interface requirements, element design requirements, verification methodologies, and assessments needed for recommendations on system progress.

Our revised approach to acquisition now specifies three broad phases: Development, Transition, and Procurement. As Director, MDA, I have oversight and

responsibility for managing the first two phases, Development and Transition. The SEC, upon my recommendation, approves progression between the two.

During the Transition Phase, the Services take on increasing responsibilities, as elements move closer to production and possible deployment. At the start of the third phase, Procurement, the Services pick up responsibility for managing the production, fielding, training, and support of the elements of the BMD System and their components. Budgeting during this phase is divided. The MDA will budget for RDT&E funds, and the Services will budget for procurement, operation and support funds.

Managing the transition between Development and Procurement Phases will be complex, but it can be done efficiently and effectively. While MDA retains System oversight, responsibility for each element is shared by MDA and the Service that will operate it once deployed. We will baseline the capabilities and configurations during transition, and the Services will develop capability-based ORDs around performance that, by this stage in development, has been characterized for a particular element. These ORDs will become effective on transfer of the element to the gaining Service.

MDA has overall responsibility for designing and maintaining the integrated Missile Defense System. For this reason, MDA retains responsibility for those element specifications that contribute to ensuring full element integration into the initial System block and in all subsequent blocks.

When ready, I will make recommendations for the procurement of elements or their components. Only the SEC can approve the move to production, and the associated budget and force structure objectives.

This decision point is not exactly equivalent to any milestone in the traditional acquisition framework, but is tailored to be a decision to transfer to a Service the responsibility for producing a particular configuration of an element and operating it in a quantity appropriate to the maturity of the system and its military utility. Should the SEC approve the move, elements entering the procurement phase would fall under the formal purview of the Joint Requirements Oversight Council, or JROC, and traditional oversight and reporting mechanisms come into play. As is the case now, the Under Secretary (AT&L) will continue to oversee Service procurement activity.

Congressional Oversight

Let me turn to the subject of congressional oversight. In the near term, changes to the missile defense structure will lead to changes in the information the Congress had previously seen, since the former Major Defense Acquisition Programs (MDAPs) are now elements within the overall BMD System. For example, prior reports included details for the PAC-3, THAAD, NMD, Navy Area, ABL, and SBIRS-Low. These now lie within the overall missile defense program. Additionally, these former reports also included RDT&E, military construction, and procurement information. Yet since the missile defense program is now primarily an RDT&E program, unit cost information will be available only after production decisions have been made. Thus while we have unit costs for PAC-3 this year, the unit costs for other elements will come later.

That underscores the difficulty of estimating System or even element costs at this time. RDT&E costs are expected to continue, although future levels may vary depending on which elements and components are chosen for full development. This parallels our

RDT&E experience in other systems as well, as we move to upgrade the right capabilities in response to changes in the threat and technology. Similarly, procurement costs and life cycle costs cannot be estimated with precision at this time, because force structure decisions on the elements or the components eventually chosen have not been made.

Nonetheless, we will submit to the Congress a Selected Acquisition Report (SAR) for the BMD System RDT&E program, to include major program schedule objectives and an estimate of the BMD System and RDT&E program funding. Without Procurement, the report cannot address production unit costs, but it will, however, include major prime contractor cost performance data. The Congress will receive unit costs to support planned procurement once the SEC decides to start that procurement.

Additionally, we will be supplying—as we have this year—the Congress with annual detailed Budget Justification materials supporting the President’s Budget submission. For example, this year’s R-2 budget document describing the details of our request is over 400 pages long. The information is consistent with the BMD System Work Breakdown Structure, legislated Program Elements, and special interest items. Included are detailed budget and schedule summaries for all major budget projects within the System, such as the extensive engineering and rigorous testing infrastructure and activities needed for THAAD and Ground-based Midcourse Defense development.

Furthermore, in addition to the annual schedule of program hearings, we have provided extensive briefings—and briefing opportunities—to both Members of Congress and congressional staff members. So far, during January and February of this year alone,

we have had over 25 hours of briefings on the program to personal and professional staff. These briefings will continue as needed.

Operational Testing

During the development phase, MDA will be responsible for conducting developmental testing with the purpose of characterizing the capability and military utility of the technologies and their integration, and for making recommendations for transition. As Director of the Ballistic Missile Defense Organization, I was responsible for that. As Director, Missile Defense Agency, I remain so. That has not changed. Moreover, the Director, Operational Test and Evaluation, is represented on the Missile Defense Support Group and as such will be in a position to advise the Under Secretary and me throughout the development and transition phases.

During the transition phase, an Operational Test Agent will be designated and focused operational testing will be conducted to characterize the operational effectiveness and suitability of the element block configuration under consideration. This operational testing will be conducted under the oversight of the Director, Operational Test and Evaluation and in accordance with a Test and Evaluation Master Plan (TEMP) that he and I will jointly approve. Based on the results of that operational testing and other inputs, the SEC will decide whether to transfer the tested configuration of the element to the Service for procurement and operation. All statutory requirements relative to operational testing will be met. Our FY 2003 budget, presented separately, details our plan to expand the BMD System Test Bed, useful for both developmental and operational testing.

Relationship with Industry

A final important facet of our restructured program is how we will work with our industry partners to develop capability.

In many ways, our relationship with industry is even more complex than with the Services. To help us find the right solution, we looked at how other unprecedented programs had been managed in their day, and these included such diverse and pioneering efforts as the Manhattan Project; the Mercury, Apollo and ICBM programs; and the experience with the Space Shuttle. In each case, government maintained total program responsibility, but what became clear was that the government, too often, did not have a detailed enough understanding of either exactly what to buy or what industry could offer. The solution lay in forging a much closer relationship between government and industry than normal practice entails.

This is the approach we are taking: to bring together as a national team the best and the brightest from the government, academia, and industry, so as to ensure timely and effective development of missile defense capability. This management approach will provide significant value-added to the missile defense program in bringing the best talent, the essential capabilities, the right process methodologies, and all of the pertinent proprietary information to bear on our solutions. And it will provide a strong, disciplined approach with incentives for high performance and quality output.

To recap, government has total system responsibility. Industry teams are responsible and accountable for block capability design, BMD System integration, and the tough challenge of ensuring effective and positive battle management, command and

control. In addition to the standard mechanisms of traditional program oversight, I intend to meet regularly with the CEOs of the relevant firms. I have already met with them, both singly and together as a group. They are on board.

Closing

Mr. Chairman, we have modified our approach to the acquisition of missile defenses because of the changes in our world. September 11 brought home the lesson forcefully. As Secretary Rumsfeld said, “We're at a moment where we no longer have the margin for error [that we] ... had decades ago where our weapons were relatively short range and where the warheads were relatively modest.¹” We can expect to be surprised again, and the consequences could be grave.

The Department has restructured the missile defense program so that we can reduce our decision cycle time during development to handle a very complex set of challenges and to react better and faster to changes in the threat. The authorities granted to me as Director are limited by checks and balances. They are monitored by a responsive oversight process that will ensure accountability and visibility for missile defense development both to the Administration and to the Congress.

Clearly, our ability to react rapidly to the swift-moving international security environment, while at the same time reforming how we do business within the Department, is a central challenge for all of us. This committee's support for the President's “Freedom to Manage” initiative will reduce statutory requirements that can

¹ Interview with [Britain's] *The Daily Telegraph*, 25 Feb 02.

restrict management flexibility, allowing us to more efficiently and effectively execute the Missile Defense Program with which we have been entrusted.

What is important is that, at the end of the day and with your support, what we in the Missile Defense Agency deliver must be of use to the warfighter and must improve our nation's security. I am committed to making sure that happens.

Mr. Chairman, that concludes my statement. I welcome your and the Committee's questions.