

Central Intelligence Agency  
Director of Central Intelligence

*Prospects for the Worldwide Development of  
Ballistic Missile Threats*

*Central Intelligence Agency*

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17 November 1993

The Honorable Ronald V. Dellums  
Chairman  
Committee on Armed Services  
House of Representatives  
Washington, D.C. 20515

Dear Chairman Dellums:

This letter responds to your request to declassify several paragraphs of the recent CIA report, classified SECRET, entitled, "Prospects for the Worldwide Development of Ballistic Missile Threats to the Continental United States." We concluded that to declassify the passages in question and still maintain the intended overall context of the study, we needed to declassify all of the principal findings of the report.

Originals of this letter are also being sent to Chairwoman Schroeder of the Subcommittee on Research and Technology and Chairman Dan Glickman, Permanent Select Committee on Intelligence.

Sincerely,

/s/ M. Moskowitz

Stanley M. Moskowitz  
Director of Congressional Affairs

Attachment

cc: Ballistic Missile Defense Organization

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## Scope Note

This paper presents a detailed examination of the prospects for future ballistic missile threats to the continental United States (CONUS) from a number of non-NATO countries. The countries examined either have ballistic missiles in place, ballistic missile development programs, space launch vehicle (SLV) programs (which inherently encompass most ICBM technologies), or intentions to pursue a ballistic missile or SLV program.

Capabilities were examined and no prospect was found for ICBM development in countries such as those of the former Warsaw Pact that have ballistic missiles but no development programs or even an appropriate R&D infrastructure. Therefore, these countries are not covered in this paper. Other countries not covered are those with a current capability to strike CONUS with ballistic missiles such as China and states of the former Soviet Union. Some countries neighboring the United States were not considered in this study because of their extremely short ranges from the United States.

For the countries evaluated in this paper, the health of each country's economy and the political climate within the country to determine the capability to support lengthy and costly ballistic missile development programs were considered. Each of the nations' technical capabilities to indigenously develop propulsion systems, guidance and control systems, reentry vehicles (RVs), and nuclear, chemical, or biological weapon warheads were taken into account.

Capabilities are projected based on a high-risk, accelerated timeline and minimum system testing development of a weapon system satisfying minimal requirements:

- A missile or modified SLV that can reach the United States at the closest point to the threat country.
- High-drag RVs or space return capsules.
- Warhead targeting accuracies on the order of 10 km or better.
- A warhead consisting of a nuclear, biological, chemical, or conventional weapon

**No evidence exists that any of the countries examined in this study are developing missiles--especially ICBMs -- for the purpose of attacking CONUS.\***

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# Prospects for the Worldwide Development of Ballistic Missile Threats to the Continental United States

**Only China and the CIS strategic forces in several states of the former Soviet Union currently have the capability to strike the continental United States (CONUS) with land-based ballistic missiles. Analysis available information shows the probability is low that any other country will acquire this capability during the next 15 years.**

A number of non-NATO countries were identified as having either the motivation or the development capability to produce ICBMs. Out of these, only four -- **Iran, Iraq, North Korea, and Libya** -- have the political support or motivation to undertake an ICBM program to strike CONUS and, with the exception of Libya, also **have the technical capability to indigenously develop an ICBM within 15 years**. However, for different reasons -- including political and economic -- **the probability is low that any of these four will complete development in that time.**

**No prospect for ICBM development was found in countries such as former Warsaw Pact countries that have ballistic missiles but no development program capability or even an appropriate R&D infrastructure.**

None of the countries considered has the need to develop ICBM-range missiles (greater than 5,500 km) to satisfy regional security. In all cases, these countries can meet and react to primary threats from neighboring countries with medium- and short-range ballistic missiles.

## Countries Most Likely To Develop ICBMs

**Iraq and Iran.** It is believed that only **the current intrusive UN inspections and economic sanctions prevent Iraq from pursuing ICBM development. Development in Iran is unlikely to be initiated within the next five years** because the Iranian economy is already straining to support other higher priority weapons modernization programs necessary for regional security. Iraq and Iran are assessed to have the technical capability to indigenously produce an ICBM capable of carrying a chemical or biological weapon -- in 10 to 15 years from the time the decision is made to begin development.

**North Korea.** **At a minimum, North Korea would require nearly 10 years to develop an ICBM** capable of delivering a chemical or biological weapon warhead and 10 to 15 years to develop an ICBM to carry a nuclear warhead. However, the probability of North Korean ICBM development is currently low because of competing demands for dwindling resources among existing high priority military programs.

**Libya.** The leadership of Libya has made public statements explicitly stating a desire for weapons of mass destruction that could be delivered by ballistic missile to CONUS. The Libyan leadership's actual commitment to such an expensive and technically and politically risky development program is questionable. Because of its limited technical capabilities, however, **Libya probably could not develop a system within 15 years.**

These four countries are likely to attempt to avoid costly and lengthy development by trying to purchase everything from, complete missile systems to essential technologies from countries with existing ICBMs. It is likely that Libya, Iran, and Iraq would significantly shorten their indigenous development timelines through the acquisition of foreign equipment and help.

## Countries With Disincentives

Several of these technically capable countries have significant disincentives for pursuing development of an ICBM. These countries either have, or are trying to develop, strong economic and political ties with the West -- particularly the United States -- and, in some way directly depend on the United States for aid or support. On the basis of an analysis of leadership priorities, it is highly unlikely that these countries would judge that possible benefits from an ICBM program would outweigh the loss of their standing in the international community, potential punitive actions by the West, and serious economic consequences.

## Countries With Greatest Indigenous Technical Potential

The countries with the greatest technical potential for indigenous ICBM development have close relations with the United States, improving relations with the United States, or no identified motivation for ICBM development. A few countries have the technical ability to develop from their space launch vehicle (SLV) programs an ICBM to strike CONUS in five years or less. Technically advanced countries could develop an ICBM to threaten CONUS within 10 years.

## Limited Number of Missiles and Minimal Performance

Because of modest technology infrastructures and weak economies, most countries now without ICBMs -- if they choose to pursue ICBMs -- probably would be able to produce only a small number of missiles. Because of the limited capabilities and likely motivations for attacking CONUS with ICBMs -- such as international coercion, deterring US attacks, and regional influence building -- it is likely that any country making the decision would pursue a high-risk development program with no (or limited) testing in order to shorten schedules and reduce the visibility of the program. In addition, the country probably would adopt minimal requirements for the weapon system; that is, boosters capable of reaching only the nearest large US city, guidance and control systems that would give reasonable probabilities of placing the weapon within city limits, and relatively large, high-drag (and therefore, relatively low-technology) reentry vehicles (RVs).

## Motivations and Capabilities For Launching

The missiles, if developed, would probably be used as weapons of last resort or as deterrents against a threatened US attack. To be a credible deterrent or to provide a counterstrike capability, however, the country must have the ability to launch or hide the missile before it could be destroyed. Unless the missile or converted SLV is made ready for launch before an anticipated conflict, this additional survivability or quick-reaction requirement of the missile system increases the technological complexity and the cost of the program. In addition, a requirement for launch during conflicts likely will preclude using typical SLVs or an ICBM disguised as an SLV, which would require on-pad preparation times from days to weeks and which would have to be launched from large, unhardened, above-ground facilities.

**Analysis of political and military doctrine within countries supports the conclusion that a launch without provocation -- referred to as a bold out of the blue -- for most countries is very unlikely.** Only countries such as Libya or Iraq would have the motivation for such an attack to perhaps gain regional prestige for striking a much more powerful nation regardless of the consequences of US retaliation. **Several highly visible test launches would be required before a country could produce an operation ICBM booster.**

## Propulsion Technology Limits

In almost all cases, **propulsion technology would be the primary limiting factor in a country's longer range missile development program.** The technologically advanced countries that have SLV development programs have progressed to designing and producing advanced propulsion systems. **Most of the remaining countries propulsion capabilities are limited to assembling or almost understanding 30 - 40 year old technologies such as that found in the Scud missile.**

**Scud technology can be modified to increase performance but not to ICBM ranges.** Clustering the lower performance engines is an option available for increasing the missile's payload capacity. Although existing Scud - type boosters could be clustered together to produce a missile with a range greater than that of a single Scud, the extremely inefficient Scud engine and relatively heavy Scud structure preclude the clustered system from achieving ICBM ranges.

## Guidance and Reentry Vehicle Technology

Guidance and RV technology satisfying the minimal requirement for placing a warhead close to a target in CONUS probably could be developed within 15 years by most of the countries, although few currently have it. Similarly, although the RV technologies would be new for many countries, developing the necessary technologies would not be a limiting factor because the countries would probably not consider high system accuracy and penetration of a ballistic missile defense system to be a requirement.

## Warheads

It is highly likely that all countries could develop an ICBM warhead within the time it would take for the country to develop the delivery system. The more advanced nations in nuclear technologies would require less than 10 years to develop a nuclear warhead. For the less advanced nations **the production of fissile material, design of a nuclear weapon, and miniaturization and weaponization of the design would take about 10 years or more to develop.** Therefore, it is likely that most of the countries examined in this study could have at least one nuclear device within the next 15 years.

Chemical or biological weapons require technologies are readily available to most countries. Any country could purchase or develop the ability to produce high-explosive or other conventional weapons and package the weapon for the ICBM warhead within several years.

## Converted SLVs

**There is a low probability that any country hostile to the United States will covertly acquire the ability to target CONUS with a purchased or indigenously developed, converted SLV.** Existing international technology transfer agreements recognize that an SLV could be converted relatively quickly by technologically advanced countries (in about one or two years) to a surface-to-surface missile. Therefore, acquiring an ICBM capability by purchasing an SLV or its production technology is recognized as a purchase of a delivery vehicle. Furthermore, acquisition of just an SLV does not establish an operational ballistic missile delivery system. **The construction of preparation, maintenance, test, and launch facilities and associated equipment is a lengthy and technologically stressful process beyond the capabilities of most countries without extensive foreign assistance.**

## **Foreign Assistance**

Experience has shown that if certain countries began indigenous ICBM development, foreign help would reduce ICBM development time. Some countries already have purchased ballistic missile-related equipment and expertise and are likely to continue relationships with foreign suppliers. Any country probably could purchase small quantities of almost any component, although purchases of entire subsystems or systems are less likely.

The Missile Technology Control Regime (MTCR) is the primary multinational forum focused on controlling the proliferation of technologies capable of being used in the development of unmanned delivery vehicles for weapons of mass destruction. The MTCR has been moderately successful at slowing the transit of missile related technologies between member and non-member countries. In addition, the United States has enacted unilateral restrictions that increase the difficulty of missile-related technology transfers between MTCR and non-member countries.

**\*Emphasis added**