The Arena

CBACI Chemical & Biological Arms Control Institute

"It is not the critic that counts... The credit belongs to the man in the arena" - Theodore Roosevelt

*Editor's Note: Our ARENA series has been marked by a hiatus for a considerable time. We are delighted to renew the series with this important discussion of a notable development in international anti-proliferation efforts. We look forward to publishing a number of forward looking analyses of critical issues in the months ahead.*

# DISMANTLING LIBYAN WEAPONS: LESSONS LEARNED

**Ambassador Donald Mahley**

## Libyan Weapons of Mass Destruction Programs

The situation presented by Libya in December of 2003, the chance to have a country voluntarily rid itself of both its weapons of mass destruction (WMD) and all missiles exceeding Missile Technology Control Regime (MTCR) Category I "standards," was an unusual if not unique opportunity. Lessons that might profitably be derived from examination of the execution of this opportunity fall, in my mind, into three areas. First, the nature of the programs in Libya, while not necessarily the kind of structure one would find in all instances around the globe, is nonetheless instructive as to how to put effective proliferation blocks in place. Second, the information about how the equipment and technology to support these kinds of weapons can move in the international arena is of even greater value to the anti-proliferator. The fragility of this kind of information and its ease of concealment demonstrate the added value of having full cooperation from the "host" state in the kind of activity we engaged during the first half of 2004. Third, some valuable lessons can be extracted from the Libyan situation in terms of how, sometimes without our even knowing it, policies and programs can actually work to prevent or impede proliferation, if only countries will actually enforce the standards they so glibly adhere to in international forums.

I would like to begin, however, with a brief description of the nature of the Libyan capability at the outset of this initiative. I also want to make clear that the observations I provide are based on the elimination and removal of existing and disclosed programs during the beginning of 2004. One of the core aspects of the overall initiative is provision for enduring transparency actions by Libya, which may or may not eventually lead to yet additional aspects of their programs currently unknown.

*This paper contains the individual views of the author. It is based on remarks at the Wilton Park Conference on "Chemical and Biological Weapons: Confronting New Challenges," held October 8-10 2004. Nothing herein should be construed as the policy of the United States Government.*

The standard description of "weapons of mass destruction" is three categories of weapons: nuclear weapons, chemical weapons, and biological weapons. In addition, MTCR-class missiles are the most threatening delivery systems for weapons in the first three categories. In the case of Libya, a thumbnail sketch would say that they had an active nuclear weapons program, actual chemical weapons in storage, and a germ of a biological weapons program. They also had an active inventory of SCUD-B missiles equipped with conventional warheadsas part of their national defense posture, and a fledgling SCUD-C program intended for considerable expansion in missile inventory and designed to deliver conventional warheads over ranges well beyond that of the SCUD B.

The *nuclear weapons program*, I want to emphasize, had not moved to the point of either accumulating weapons-grade fissile material or of assembling nuclear warheads. Libya had procured UF6 and a significant number of centrifuges, with the admitted intent of first developing the skill of centrifuge enrichment and then setting up centrifuge cascades to produce enriched uranium. Although at the beginning of 2004 the research reactor in Libya was using highly enriched uranium (HEU) fuel - it has since begun the conversion to LEU fuel use - there was no evidence that Libya had attempted to use the reactor and fuel rods as an illicit source of weapons-grade material. After the Libyan announcement of December 19, 2003, the Libyan government, with the active participation and cooperation of United States and United Kingdom experts, and with timely notification to the International Atomic Energy Agency (IAEA), removed from Libya all the UF6, the elements of the Uranium Conversion Facility in Tripoli that potentially could have produced UF4 from yellowcake, and all the centrifuges which had been purchased to create uranium-enrichment cascades. Fuel rods of HEU removed from the Libyan research reactor are still in Libya, but are under safeguard seal by the IAEA.

The Libyan *chemical weapons program* had its initial production facility at Rabta, a fact openly stated by the Libyan government at the beginning of our activities in Tripoli. It had not produced chemical agent for some time. Libya's inventory of chemical agent was limited to less than 25 tons of mustard gas, prepared for fill - but not actually weaponized - in aerial bombs. Libya announced that it had procured equipment for a second production facility but had not actually installed the equipment (The equipment was still in shipping crates). During 2004, Libya destroyed over 3,000 unfilled bomb casings that had been designed to employ chemical agent, and consolidated the agent inventory in a single storage location to facilitate inspection by the Organization for the Prohibition of Chemical Weapons (OPCW). Libya has acceded to the Chemical Weapons Convention, and has, with U.S. and UK assistance, submitted its initial declarations in fulfillment of its obligations to that Convention. It is now preparing for the destruction of its chemical agent stocks under the OPCW's supervision.

Libya has had in place for a considerable period of time a SCUD-B *missile force* as a part of its overall strategic defense posture. These missiles were equipped with large conventional high-explosive warheads. At this time, there do not appear to have been plans to convert them to delivery systems for weapons of mass

destruction. The range and payload capabilities of the SCUD-B, however, are in excess of the Missile Control Regime (MTCR) Guidelines, and those missiles are inherently capable of delivering WMD. Of more direct concern was the Libyan program to produce SCUD-C missiles, which were designed to have a longer range than the SCUD-B. Libya has committed to eliminate its entire SCUD-B inventory, cancelled the SCUD-C production program with the DPRK, and turned the already-produced SCUD-C missiles and support equipment over to U.S. and UK experts for removal from Libya. This relocation has been completed.

The last element of the Libyan announcement relates to *biological weapons*, and it is a more complicated situation. Libya seems to have contemplated a biological weapons program. To support such contemplation, Libya decided to procure a dual-capable facility, ostensibly for public health-related research, that would provide the option to pursue biological weapons research as decisions about such research were made. The Libyan scientific personnel charged with actually procuring the capability were not necessarily informed of the diverse purposes to which such a capability might be put - which is indicative of the broader international difficulty of pursuing biological weapons proliferators. All the elements of a biological weapons program, with the possible exception of specialized munitions and munitions filling equipment, also have peaceful uses. So it is entirely possible to conceal, even from your own personnel who might be working at a dual-use facility, the full range of purposes to which the facility might be put. I will have more to say about Libya's travails in trying to acquire advanced biological capability later, but for now simply note that their efforts were largely rebuffed by the international community through the successful enforcement of sanctions. To the best we have yet been able to discover, there are no physical facilities or munitions related to the biological weapons program.

**Development of the Libyan Initiative**

In order to understand better the lessons available from the Libyan decision of December 19, 2003, a brief look at how that decision developed, from a United States perspective, might be useful. It was not a decision that was launched out of the blue. Rather, it was the result of a lengthy series of events.

One of the things in which the international community can take satisfaction is that, in contrast to a number of situations of equal gravity now extant, in the Libyan case other nations of the world were prepared to act forcefully in the face of Libyan terrorist acts. There was sufficient evidence pointing to Libya as complicit not only in the bombing of PanAm 103 but the *La Belle Disco* explosion to support international sanctions (not to mention U.S. bombing). Over time, the result was to isolate Libya from the international community, stagnate its economy and other parts of its society, including education, and generally make life less comfortable.

Over time, these conditions must have frustrated Libyan efforts and aspirations to advance their interests. For whatever motivation, Libya finally decided to

pursue very quiet diplomacy in an effort to resolve the Lockerbie situation in the aftermath of the international court hearings that placed responsibility for Lockerbie at the feet of Libyan officials. After achieving some success there, senior Libyan officials engaged in another round of very limited and quiet diplomacy about weapons of mass destruction. There were a number of exchanges – that I will not detail – which allowed U.S. and UK officials to gain firsthand insight into the scope of Libyan efforts toward acquiring weapons of mass destruction, and to demonstrate the U.S and UK intent to support a forthright decision by Libya to get out of the WMD business. The outcome of these efforts was a coordinated announcement on December 19, 2003, in all three capitals, wherein Libya renounced its WMD programs, and both Washington and London welcomed the announcement.

That announcement put the dismantlement effort on the fast track. Almost immediately, the circle of officials informed about the Libyan situation had to expand. Hitherto uninvolved elements of the governments of both the United States and United Kingdom had to formulate operational plans on how to support Libya in executing its decision, and those plans had to be coordinated with the Libyan government. While to the casual observer it may seem routine, it was really quite extraordinary that a U.S./UK team was on the ground in Tripoli less than a month after the December announcement.

One of the first tasks when reaching Tripoli was to translate what had been agreed among the three governments at the beginning of January into a set of action plans in handling actual materials on the ground. We were able to accomplish that in less than a week of meetings, including time to observe elements on the ground to make sure that what we were talking about on paper made practical sense.

I want to make one point absolutely clear: This was not a punitive expedition, nor was it a problem of dragging things away from a protesting Libyan government. Libya had made a decision, which we in the United States and United Kingdom were assisting it in carrying out. Libyan officials were clear about that, and so were we. There was early agreement on what materiel was of such sensitivity to potential proliferators or of such potential international demand that it needed to have expedited relocation to a more secure environment. There was agreement on the scope of activity. There was solid cooperation among all three governments.

One vignette about atmospherics, especially in light of the earlier experience of UNSCOM in Iraq: Much has been written about the need for UNSCOM personnel to be good interrogators with bulldog tenacity to extract from an unwilling Iraqi host the information and even the access sought. But the Libyan decision had been communicated downward through the Libyan government. When we asked to go to a location, we were taken there. When we asked to see equipment, or inside buildings, or a site where we thought there might be some activity that had not been "declared," we got what we asked for, in the overwhelming majority of cases quickly and with outstanding effort on the part of our Libyan hosts. I should, however, make one *caveat.* We have been dealing with what Libya declared, balanced with what our assessments indicated of their capabilities and activities. Within that

scope, I am confident we have removed the materiel and capability we needed to remove. The long-term transparency cooperation still ongoing with Libya, however, will provide a needed and valuable additional level of confidence that Libya has actually ended all aspirations for present and future WMD programs.

**Lessons Learned**

An important lesson for future analyses of potential proliferation situations that emerges from the Libyan case relates to the ability of a country to obtain weapons of mass destruction without developing the capability domestically. Libya did not develop a domestic infrastructure to carry the program from basic science to the end weapon stage. They simply bought the capability, in a large sense "off the shelf." This is more true in the nuclear arena than in the chemical arena, but even with chemistry, the precursors - such as one of the components for the binary nerve agent Libya sought but did not achieve - were purchased, as was the specialized production equipment and instructions for how to make a chemical agent.

In the nuclear case, the most critical material, UF6, was purchased. The components of the Uranium Conversion Facility were purchased. The centrifuges were purchased. If there had been no international network to sell these items to Libya, the threat would have been delayed considerably, if not thwarted altogether. The lesson states should learn from this is that comprehensive, dual-use-inclusive, actively enforced restriction on the international flow of such materials is not only useful, it is essential. Preventing the rise of sources domestically is a component of international cooperation for which nations should be held accountable, no less than their own national compliance with their pledges not to acquire such weapons of mass destruction. UN Security Council Resolution 1540, which expresses a multilateral endorsement of strong national laws and enforcement against WMD actions by non-state actors, is also a useful component of the pressures that should be brought to bear against such activity.

I believe firmly that aggressive international action on the supply-side control has two success stories to its credit with respect to Libya. The first is straightforward: using elements of the Proliferation Security Initiative (PSI), one of the shipments of centrifuges to Libya was intercepted. This put a considerable crimp in both progress and the availability of replacement resources, not only in terms of the cost involved but also from the perspective of making a supplier more cautious for fear of having the entire network uncovered. It is clear that this event did not cause Libya to commence the quiet dialogue about the future of their WMD programs. However, it well could have accelerated their decision to renounce publicly all such activity. The PSI success emphasizes both the need for a diverse set of tools to attack proliferation issues, and the crucial component of enforcement of commitments to make them actually work.

The second success is more subtle. I indicated earlier that Libya had been unable to obtain the dual-purpose capabilities it sought in biology, potentially to become the foundation of a biological weapons program. Everyone should

understand that the capabilities in question are not uniquely biological-weapons oriented. In fact, they were the kind of laboratory and research facilities that many countries have as part of their general medical capabilities to improve the health of national populations. The Libyan scientists pursuing this capability, in part possibly because they were not told about the potential diversion of capability, sought to contract laboratory construction with Western firms, where they had faith in quality control and delivery reliability. When they attempted to finalize the contract, however, the contacted firm declined once the location of construction was revealed, citing, according to Libyan officials, the problem of providing a country (Libya) under sanctions with the dual-capable equipment and facilities specified in the request. While this outcome illuminates the potentially draconian effect of sanctions when applied (the purpose of the construction could equally have been purely humanitarian), it is a rare revelation of how stringent sanctions programs must be in order to impinge on the kinds of covert and dual-purpose capability building rogue states can conduct.

Rabta also constitutes an interesting lesson from the Libyan experience. Now that it has been openly declared as a chemical weapons production facility and opened to international view, Libya is in the process of requesting its conversion to peaceful purposes within the scope of the Chemical Weapons Convention. As a personal view, I think such conversion should be encouraged. However, the lesson here is twofold. First, intelligence did not fail when it identified Rabta early on as a chemical weapons facility - despite the then vehement denials of the Libyan government and the doubt of numerous countries who wanted "smoking guns" to accept the intelligence assessment. Second, even when it was actively producing chemical weapons, Rabta was a "dual-use" facility. The chemical agent production lines were separated from the main part of the plant, behind separate walls. Fully dedicated facilities are not required.

With regard to the full extent of the program, an observation is in order. Prior to the December 19 announcement, there had been dialogue and even visits by select U.S. and UK officials. However, Libya obviously had not made a truly authoritative "full disclosure" decision until it was so announced in December. When we arrived in January, we were voluntarily taken to additional resources that had not been discussed earlier. Our interlocutors were candid in advising us that they had not received instructions to be completely open earlier, so had only followed the instructions they had been given. The point here is not whether there was less-than-complete disclosure earlier, but to point out that the incomplete disclosures were coherent and internally consistent, and involved all the major facilities that would have been required for a complete program. The additional materiel disclosed in January would have taken a lengthy dialogue and on-site set of procedures to uncover without Libyan cooperation. The lesson to learn? It is relatively easy, even in a country where the bulk of the territory is open desert, to conceal elements of a WMD program if there is national dedication to do so. The idea that a single or even repeated short-time international inspection routine is sufficient to provide high confidence nothing has been missed is truly viewing the situation through rose-colored glasses. It is a tough job that requires considerable time and expertise.

In my view, Libya chose an unusual way to pursue weapons of mass destruction. Particularly given the clandestine nature of acquiring such weapons, it would seem more logical to develop all the requirements domestically, buying from abroad only sparingly and only those critical components not obtainable from domestic development, design, or production. Instead, Libya appears to have used its relatively abundant oil revenues to buy most of the components of its programs from abroad. This is true of nuclear enrichment capabilities, the raw material to put in those enrichment facilities, the conversion capability to produce more enrichment fodder, chemical production equipment and precursors, and missiles. One note to this long-term buying spree: Libya paid very high prices for not very advanced materials, so this method did not demonstrate the success characteristics that would recommend it to another, less solvent, state.

I would speculate that part of this decision was forced on Libya by the activism practiced by the international community, especially Australia Group export controls and U.S. interdiction efforts, later bolstered by the UN terrorism sanctions. The requirements to use indirection or clandestine networks for acquisition of capability limits the number of options available, requires payment of sums far in excess of the "fair market value" for the goods received, necessitates acceptance of shoddy goods, and severely restricts the number of personnel you can employ in developing the program. In fact, in dealing with Libyan leadership, I characterized it as having, in American sports terms, "almost no bench." The Libyans we dealt with were knowledgeable, dedicated, and innovative. But we continued to deal with the same ones repeatedly. One of the elements the United States and United Kingdom considered part of the Libyan project was how to provide opportunities for those skilled technicians who had been involved in WMD programs to obtain self-gratifying and constructive employment in Libya for peaceful projects, thus denying other "would be Libyas" the opportunity to entice them away. This effort should not be onerous in Libya because of the small number of relevant specialists and because natural opportunities of the expanding Libyan economy once economic sanctions are lifted will provide numerous ways they can use their expertise in legitimate channels.

Another lesson learned from this experience is the relative ease with which a government can compartmentalize a WMD program, denying even those working on the technical capabilities a full understanding of the purpose for which those capabilities are being developed. This has important implications for intelligence services, and for policy communities that draw inferences from intelligence material. It is unrealistic, even in the case of national actors, let alone even more paranoid terrorist groups, to expect that the existence of a WMD program will necessarily become widely known or "emit" telltale signatures to allow certainty in assessment. Conversely, policymakers necessarily must make decisions and operate under conditions of increasing uncertainty, since the unavailability of certainty otherwise would lead to paralysis.

## Conclusions

As dangerous as rogue states will continue to be, over the coming decade the non-

state actor will become more prevalent, and some of the mechanisms that have worked in Libya may not be available or not be properly focused for the non-state-actor element.

Libya is a sharp contrast to the scenario of "domestically developed" programs to pursue WMD. It used revenues - large amounts of revenues - to obtain almost all the components of its programs from abroad. This allows the international community to focus additional tools on the acquisition program, as well as additional intelligence assets, since both ends of the supply channel as well as the transit mechanisms and lengthy time required for transit are susceptible to international observation and scrutiny. The sizes of the sums involved offer the chance to examine international banking for sums of significant magnitude, as another way to "tap into" the network activity. None of this is easy, but it is considerably easier than trying to penetrate a domestic network, where the only realistic chance is the "humint" defector or whistle-blower - either of which carries its own *caveat* of timely access and reliability.

However, the intelligence communities of concerned nations should take some deserved credit for their work with regard to Libya. In contrast to the continuing arguments over Iraq, Iran, and even North Korea, it is now apparent that "doubts" expressed in the 1980s about intelligence claiming Libya had a chemical weapons production facility at Rabta are themselves unfounded. The intelligence linking Libya to PanAm 103 and *La Belle Disco*, even though also challenged, has also proven accurate in the end. In fact, the speed with which intelligence sources identified the potential underground alternative to Rabta may well have been the reason Libya abandoned that project even before completing it. As a corollary, it appears that the publicity attending the various intelligence claims about Libya did feed back to the Libyan leadership, and have some influence on their eventual decision that pursuing such covert programs simply would not provide them with any decisive or event influence-wielding advantage.

There is a real lesson for other rogue states in Libya's logic in abandoning its programs. In conversations with various levels of Libyan leadership, I was given the repeated impression that they believed they were getting very bad value for the money spent, could not depend on clandestine networks as reliable trading partners, and eventually could find no satisfactory answer to the question about how even a successful program was going to enhance Libya's security. All of those are cautions that other states pursuing WMD programs ought to ponder carefully.

Finally, the lesson of the value of making pursuit of such programs a costly exercise should be taken seriously by all states. Imposing sanctions hurt Libya overall, making a decision to renounce WMD programs easier to make. Sanctions, in company with export controls and good domestic legislation in supplier countries – making Finns aware both of the potential their products could serve and the potential cost of engaging in "unfettered" free trade – severely degraded the availability to Libya of the components of its programs. Aggressive enforcement of control mechanisms, to include the Proliferation Security Initiative, actually intercepted goods bound for Libya - and, if nothing else, gave the Libyans a proximate cause to make

and follow up on an open renunciation of WMD capability. That does not mean the next case will be as decisive, but it certainly is ample cause to continue vigorous pursuit of the policies that provide leverage against procurement and transfer of the components of WMD capability.

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