



# BLACK DAWN

Scenario-Based Exercise

Brussels, Belgium

May 3, 2004





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## EXERCISE Overview and Objectives

*Black Dawn* was a scenario-based exercise on catastrophic terrorism held in Brussels, Belgium on May 3, 2004.<sup>1</sup> The exercise gathered approximately 55 current and former senior officials and experts from the European Council, the European Commission, NATO, 15 member states and various international organizations<sup>2</sup> to grapple with the challenges associated with preventing terrorist use of weapons of mass destruction (WMD). The primary aim of the exercise was to develop a set of actionable recommendations for the EU, NATO and individual European governments to prevent terrorists from acquiring and using WMD. The exercise was designed to energize discussion and debate as various European countries and institutions enter into their policy and budget deliberations. Organized under the auspices of the Strengthening the Global Partnership project by the Center for Strategic and International Studies and the Nuclear Threat Initiative, *Black Dawn* was held at the German Marshall Fund's Transatlantic Center in Brussels.

*Black Dawn* differed from other high-level exercises in several ways. Whereas other exercises have focused on consequence management, *Black Dawn* emphasized prevention, specifically asking what European governments and institutions can do to prevent terrorists from acquiring and using nuclear, biological or chemical weapons and materials. Second, the exercise gathered representatives from across a broad range of European and international organizations and created an opportunity for frank and open dialogue on a "not for attribution" basis. Finally, *Black Dawn* was an exercise, not a simulation. It presented a realistic scenario, but did not involve role-playing or simulating an actual decision making body.

## EXERCISE Concept

The exercise was animated by the presentation of a fictional scenario in a series of "moves." Each move involved a briefing on scenario developments, an assessment of the plausibility of these developments based on real-world facts, and group discussion of key questions pertinent to the move. In order to facilitate substantive discussion, more than a dozen experts attended the exercise with experience in a variety of fields ranging from terrorism, counter-terrorism, and nuclear weapons, to consequence management and crisis response.<sup>3</sup>

<sup>1</sup> See "What if? Europe Simulates al Qaeda Nuclear Hit," International Herald Tribune, May 5, 2004, p. 1, for a sample of the press coverage the event received.

<sup>2</sup> A complete listing of participants is found in Appendix A.

<sup>3</sup> A complete listing of experts and observers is found in Appendix B.



# 1 MOVE >> Intelligence

Move 1 began with a video of a simulated intelligence report. The report stated that evidence obtained during the capture of a senior al Qaeda operative strongly indicated al Qaeda had obtained a significant amount of highly enriched uranium (HEU) from an unknown source and was planning one or more nuclear terrorist attacks in the United States or Europe.

The fictitious intelligence briefing was followed by an assessment based on factual information. This assessment detailed al Qaeda's documented interest in WMD, potential sources from which al Qaeda might have obtained HEU, what terrorists could do with HEU, where they might target a WMD attack, and the challenges associated with detecting and interdicting the material.

## **Al Qaeda's goals.**

Unlike other terrorist groups, al Qaeda's actions are not moderated by a desire to become part of a negotiating process or to achieve incremental change in the status quo. Al Qaeda views terror as an expression of all-out war. Its desire for a nuclear weapon stems from its revolutionary goals to establish a new world order in which the West is driven out of the Realm of Islam, "moderate" Muslim regimes are toppled, and a single Muslim super state is established. Creating mass casualties — especially American and allied casualties — is seen as essential to achieving these goals.

## **Al Qaeda on WMD.**

Acquisition of weapons of mass destruction has been a priority since the earliest days of al Qaeda. There is ample evidence of the group's sustained interest in chemical, biological, radiological and nuclear weapons. Osama Bin Laden has asserted a "religious duty" for al Qaeda to seek nuclear weapons. His position has been confirmed by others, including the Saudi radical cleric Naser bin Hamad al-Fahd, who issued a fatwa in 2003 endorsing the use of weapons of mass destruction.

## **Al Qaeda nuclear activities.**

There have been several known instances in which al Qaeda operatives attempted to acquire nuclear materials or expertise over the past decade. In addition, technical documents discovered at an al Qaeda safe house revealed that the organization has focused considerable attention on nuclear weapon design issues. Al Qaeda's ideology, goals, public statements, and actions all indicate they would conduct nuclear attacks if they had the means, and there is ample evidence that they are working toward this objective.

## **Target selection criteria.**

Given their past modus operandi, al Qaeda would likely choose targets that would enable them to inflict as many U.S. and Western casualties as possible, destroy a symbol of American or Western power, and obtain maximum media coverage of the devastation.





### Europe a potential target.

Recent terrorist acts in Turkey and Spain, and the discovery of unexploded bombs in France, underscore the fact that Europeans are now targets. In addition, the jihadist network in Europe has expanded significantly. Europe is now a key base of operations and recruiting for al Qaeda, which has cells in nearly every EU country. Moreover, if al Qaeda obtained nuclear materials in Europe, where some of the most vulnerable supplies of the most desirable materials happen to be, security and logistic concerns could lead them to select a target in Europe instead of the United States.

### Likely nuclear material sites.

Aside from actual warheads, there are more than 650 metric tons of weapons-usable fissile material — highly enriched uranium or plutonium — in the former Soviet Union. This material is located at dozens of civilian and military facilities, primarily in Russia. Only 43% of this material has received any security upgrades. Many of the Russian sites remain in need of better physical protection and material control and accounting procedures.

### Civilian research reactors.

Another possible source of HEU is the more than 130 HEU-fueled research reactors in more than 40 countries around the world. Fifty of these sites are in or near Europe. Worldwide, these reactors account for about 20 tons of HEU in their fuel cycles — enough to make hundreds of nuclear weapons. They use smaller fuel elements than power reactors — about 1 meter long and 10 centimeters wide — that are light enough to be carried by a single person. In addition, many of the reactor sites have in storage fuel that has not yet been irradiated as well as spent fuel that has been cooling long enough to reduce the radiation hazard to thieves. Although HEU research reactors are subject to IAEA safeguards, they remain more vulnerable to theft or diversion than other nuclear facilities. Many are located at universities where security awareness is low and physical protection standards are neither uniform nor stringent. In addition, more people have access to the materials, and many of them are poorly paid and not rigorously screened.

### What would al Qaeda do with HEU?

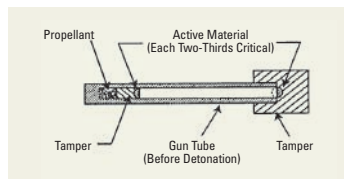


HEU is not well suited to building “dirty bombs,” so its possession by al Qaeda would indicate an intention to build an improvised nuclear device. In fact, obtaining the nuclear material — either plutonium or HEU — is the chief

technical and logistic obstacle to building a nuclear bomb. Recruiting the necessary technical and scientific competence would be well within al Qaeda’s capability, and the non-nuclear components are readily obtainable. If all the non-nuclear components were in place, the process of extracting HEU from fuel elements, fashioning the fissile material, and constructing the weapon could be accomplished in a matter of 3 to 4 weeks.

### Simple gun-type weapon.

There is broad consensus among nuclear weapons experts that widely available plans could be used



Gun type nuclear weapon design

to build a “gun-type” nuclear device, similar in design to the Hiroshima bomb, which was detonated without previous testing. This

device could be built with readily available machining tools. A simple gun-type improvised nuclear device using 40-60 kg of 90% HEU could produce the explosive equivalent of 10 kilotons or 10,000 tons of TNT.

### Nuclear smuggling.

If al Qaeda obtained HEU, it would be very difficult to prevent them from moving the small amount of material required to wherever they intend to process the material and build the weapon. Fuel elements could be “shielded” in lead containers or water tanks, and detecting and interdicting the material would be made even more difficult by the thousands of kilometers of borders and hundreds of legitimate border crossings in Europe. When one considers the difficulty governments have preventing illegal narcotics from crossing borders, the likelihood of their stopping a specific illegal shipment appears remote.

### Detection and interdiction programs.

The European Commission, the IAEA, various European countries and the United States are all funding a variety of programs throughout Eastern Europe and the former Soviet Union to strengthen border and export controls and to interdict nuclear smuggling. Despite the abundance of activity, these programs are neither comprehensive nor foolproof, nor are they on fast tracks toward completion.



# Discussion

## KEY QUESTIONS

- What should be done to enhance our knowledge of the situation?
- What actions should be taken to try to detect and interdict the material or otherwise prevent an attack?
- What preparations should be taken now to try to reduce the consequences of an attack?
- How should international actions be coordinated?
- Who else should be notified?
- What, if any, information should be released to the public and by whom?

### Limited detection and interdiction options.

The best, maybe the only, effective means of preventing a nuclear terrorist attack is to secure all weapons-usable nuclear materials. Once these materials go missing, only luck on the part of authorities or mistakes on the part of terrorists are likely to stop an attack. The options for effective detection and interdiction are severely limited. Even so, existing detection and interdiction programs need to be enhanced and expanded in European countries, not focused only on the former Soviet Union.



Former U.S. Senator Sam Nunn served as Chair of the exercise.

### Inadequate capacity for multilateral information sharing.

The intelligence collection and analysis capabilities of individual European countries vary widely, and limited intelligence sharing tends to occur on a bilateral basis. When it comes to sharing sensitive information on a multilateral basis, as would be required by this scenario, established information sharing protocols and procedures are inadequate, as are secure communication links. Europe should consider creating a focal point for information sharing that would have following characteristics: (1) the confidence of all contributing states, (2) standing analytical capacity, (3) secure communications, (4) close links to the appropriate decision-making bodies, (5) the ability to integrate non-European countries, and (6) the ability to integrate military and law enforcement entities.

### Encourage Muslim condemnation of WMD.

Although traditional approaches to deterrence would not likely stop terrorists from using WMD, there may be ways of increasing public opposition to such use in the Muslim world. Muslim leaders worldwide should be encouraged to condemn any use of WMD by terrorists in the name of Islam.

### Plan for the continuity of government.

Plans must be made in advance of an attack to facilitate political decision-making during a crisis, especially since capitals and seats of government are among the most likely targets.

### Don't play into al Qaeda's hands.

Actions taken to prepare for a possible nuclear attack must be weighed against unintended consequences that might favor al Qaeda's strategic objectives. Although some consequence management preparations may be prudent, actions that incite public panic or economic instability would contribute to al Qaeda's success before they even attack.

### Information must be made public early.

Credible information must be made public before the news is "leaked." Joint public appearances by senior officials with a clear, collective statement could contribute to sustaining public confidence.



# 2 MOVE >> Attack

Move 2 was initiated with a simulated report that a 10-kiloton nuclear device had been detonated in Brussels. Exercise participants were provided with an analysis of the probable effects of the attack over the course of several days based on modeling of the explosion and subsequent radiation fallout.

Brussels

## Initial Effects.

An estimated 40,000 people would be killed and 300,000 others would be injured.

## Structural Effects.

Ground shock and blast effects would destroy all structures within a radius of 350 meters. Damage to buildings would be severe out to two kilometers with scattered fires from ignited combustibles out to 1.5 kilometers. Electromagnetic pulse (EMP) would destroy unprotected electrical systems within 3 kilometers of the blast site and disrupt systems even beyond 25 kilometers.

## Communications and Infrastructure.

Landline and cellular communications would be inoperable. Roads would be destroyed or severely damaged, hampering rescue operations. Brussels international airport would be contaminated and cease operations. The physical and EMP damage to electrical, water, and sewage systems would have a cascading effect throughout Europe, leading to widespread losses of essential public services.

## Four Hours After Detonation.

The downwind radiation plume would extend 6.5 kilometers long and more than 1.5 kilometers wide. Unprotected rescue workers would be contaminated, becoming unable to function within 12 hours and later dying. Patients exposed to high doses of radiation would contaminate hospitals that remained operational.

## 12 Hours After Detonation.

The radiation plume would spread out to eight kilometers. Those still in the fallout area would continue to receive heavy radiation doses, leading to another potential 40,000 casualties.

## 48 Hours After Detonation.

The radiation plume would spread out to over 20 kilometers and expand to 3 kilometers wide. Another 2,000 people could potentially die. Overwhelmed emergency responders would remain unable to remove contaminated fatalities from the “hot zone.”

## Seven Days Later.

Within seven days, significant regions in Belgium, the Netherlands, and Germany would receive substantial radiation exposure. Agriculture in the area would collapse as consumers refused to buy potentially contaminated products. Telephone communications, electricity transmission, and roads and other forms of transportation in the stricken area would remain out-of-order. Most Brussels-based businesses and the Belgian stock market would still be closed.

## Economic Impact.

The economic losses from the attack would be incalculable. Hundreds of thousands of previously healthy, productive people would have been killed or severely injured. Much of the infrastructure of Brussels and beyond would be devastated. Some of Europe's prime agricultural regions would be contaminated or feared so, grinding commerce to a halt. Employees across Europe and the United States would refuse to come



to work. World markets would crash. Transportation would be disrupted throughout the world as governments — fearing a follow-on attack — would close borders, airports, seaports, and other perceived targets.

## Social Impact.

In addition to creating fear, panic, and grief in the population most directly affected, the fears of additional attacks would create alarm even in regions far from Belgium. There would be panic buying of food, medicine, and other essentials. Civil disturbances could include demands for stronger government security measures, vigilante attacks on Muslims, and public demonstrations.



# Discussion

## KEY QUESTIONS

- What are the most crucial steps, especially early on, to manage the consequences of the attack?
- How should the international response be coordinated?
- What should be communicated to the public and by whom?
- What other actions should be taken in response to the attack?

Although consequence management was not the focus of the exercise, a short period of discussion was devoted to the associated challenges. The Move 2 discussion emphasized the following themes:

### **Europe is not prepared to respond effectively.**

Today Europe has less capacity to respond to such an attack due to reductions in consequence management capabilities and programs since the end of the Cold War. Greater capacity needs to be developed within Europe to manage international crises. A nuclear attack in any country in Europe would be a European problem, and would solicit a European response. A coherent international response plan must be developed to coordinate assistance, including establishing the procedures, agreements, and laws necessary to enable an effective response.

### **Maintaining public confidence is critical.**

Loss of confidence in democratic governments to protect their populations could have ramifications whose impacts would exceed death tolls, property damage, and economic consequences. Protecting the population from the attack's effects and from further attacks is the most important aspect of consequence management.

### **Advance recovery plans are crucial.**

Long-range recovery plans must be made in advance, with a focus on strategic recovery (market/economy) to restore public confidence. This is critical to preventing al Qaeda from accomplishing its objective of destroying the West's economy.





## MOVE 2 Injects

After the Move 2 discussion, a scenario update was provided in the form of a simulated Al Jazeera film clip. The video displayed Usama bin Laden speaking in Arabic, with an English translation voice-over, claiming responsibility for the Brussels attack and insinuating al Qaeda had the capability to strike again.

Immediately following the Al Jazeera clip, a second simulated intelligence briefing video was played revealing that IAEA inspection teams had discovered that approximately 150 fuel assemblies containing HEU had gone missing from a civilian research reactor in Belarus, and other inspection teams sent to research reactor sites in Europe had discovered significant anomalies in HEU fuel assembly inventories. The intelligence analysis concluded that given al Qaeda's established pattern of attacks during the past several years, they would likely attempt to conduct multiple, near-simultaneous attacks if at all possible. Therefore, a second terrorist nuclear attack had to be considered a distinct possibility.

## MOVE 2 Scenario Details

At this point the exercise ended and the participants were briefed on how the terrorists actually acquired the HEU, constructed a crude device and conducted the attack. While the scenario was fictional, it had been thoroughly vetted with numerous terrorism and nuclear experts who agreed the scenario was entirely plausible. It was also emphasized to the participants that this specific scenario was only illustrative — the terrorists had other options available to them at each step along the way. Due to the plausibility and sensitivity of the scenario, its details have been omitted from this report.

At this point in the exercise, the general attitude of the participants towards the scenario was that it was credible enough to provide the basis for further discussion of how best to prevent such an attack from occurring.







# FINAL DISCUSSION

The final period of the exercise focused on *Black Dawn's* central questions:

- In hindsight, what could we have done to prevent terrorists from acquiring these materials and conducting such an attack?
- And what more can and should we be doing now?

The final session began with a short presentation, during which a menu of eight options was offered to stimulate discussion on what more can and should be done to keep WMD materials and weapons out of the hands of terrorists.

## **Option 1: Launch a Global Cleanout of HEU Research Reactors.**

Governments could work together to clean out the highly enriched uranium from research reactors around the globe. Although the United States, Russia, and the IAEA plan to address some of these sites over the next several years, the majority will continue to use and/or store HEU indefinitely, unless additional action is taken.



Control panel of nuclear reactor

## **Option 2: Accelerate Efforts to Consolidate and Secure Dangerous Materials.**

Accelerate the consolidation, protection, and elimination of dangerous materials in the former Soviet Union, particularly Russia. Europe could establish its own set of programs along these lines at Russian civilian sites,

while the United States could accelerate its current efforts at military sites.

## **Option 3: Expand Efforts to Employ Former Weapons Scientists and Personnel.**

More needs to be done to engage former weapons scientists and personnel in peaceful commercial work. If governments were to allocate even minimal additional money toward existing programs, they could directly reduce the number of scientists who might be tempted to sell their expertise to terrorists.

## **Option 4: Accelerate the Consolidation of Russia's Nuclear Weapons Stockpile.**

Provide increased assistance to Russia's efforts to consolidate its stockpile of nuclear weapons into a reduced number of more secure storage sites.

## **Option 5: Increase Transparency and Destroy Tactical Nuclear Weapons.**

The United States and Russia could provide greater transparency regarding the numbers, locations, and status of their nuclear weapons in and around Europe. So far, Russia has prioritized reductions in strategic weapons over tactical weapons, even though the latter pose a significantly greater risk of terrorist diversion.

## **Option 6: Increase Funding for Chemical Weapons Demilitarization.**

Current funding is not equal to the task of consolidating, securing, and destroying Russian chemical munitions



as rapidly as the risk of terrorist acquisition demands. The international community could drastically expand its current efforts either by directly supporting efforts to secure CW stocks awaiting destruction and to accelerate their destruction or by supporting related infrastructure projects.

#### **Option 7: Engage in Bio-safety and Bio-security Confidence Building Measures.**

To build greater transparency and eventually redirect biological expertise and facilities to peaceful uses, the international community could initiate confidence-building measures in the bio-safety and bio-security sphere. Particular emphasis should be placed on the Russian Ministry of Defense, whose biological weapons experts do not currently participate in any threat reduction activities.



#### **Option 8: Establish Global Partnership to Reduce Risk of Bio-terrorism.**

This partnership would engage governments, international organizations, non-governmental organizations and the private sector in a multiyear effort to accomplish several tasks: improve infectious disease surveillance and early warning systems worldwide; strengthen the health care infrastructure; research and develop new vaccines, new drugs, and diagnostics tests; develop guidelines for implementing epidemic control measures; and encourage members of the scientific community to design a system of best security practices.

## Discussion

### KEY QUESTIONS

- What can we do to reduce the risk of terrorists' acquiring WMD?
- How should these actions be prioritized? Are there particular areas of comparative advantage for European states and organizations?
- How can governments and other actors be persuaded to take these steps? What obstacles exist, and how can these be overcome?

In the final discussion it became clear that the participants, while generally agreeing with the options presented, thought that additional measures should be added to the list. Some specific examples include:

- **Strengthen international nonproliferation regimes** and work towards their universal implementation;
- **Enhance and expand export controls;**
- **Improve national and international capabilities for detecting and interdicting weapons of mass destruction;**
- **Establish more robust international mechanisms for information sharing and crisis management;** and
- **Improve counter-terrorism measures,** specifically by adding all countries to the international passport control database and beginning a regular series of counter-terrorism exercises focused on dealing with missing WMD material or missing weapons. Include law enforcement options to disrupt and dismantle terror organizations.



Heads of State at the G8 Summit in Evian, France, June 2003



# CONCLUSION

There are several unforgettable lessons from the *Black Dawn* exercise:

**The threat of WMD terrorism is real.** A terrorist nuclear attack on U.S. or European interests is consistent with al Qaeda's objectives and is well within al Qaeda's operational and technical expertise.

**It could happen in Europe.** There are numerous targets in Europe that are attractive to al Qaeda and other extremists. U.S. and European economies are so tightly intertwined, if nuclear terrorism hits one, it will stagger the other.

**Prevention is the best option.** After an attack has occurred, there are no good options. The most effective, least expensive way to prevent nuclear terrorism is to lock down and secure weapons and fissile materials in every country and in every facility that has them. No terrorist can launch a nuclear attack without weapon-grade material — plutonium or highly enriched uranium. Once the material is missing, it is difficult — if not impossible — to detect and interdict.

**We can take concrete steps to significantly reduce the risk of terrorists acquiring nuclear, biological and chemical weapons.** The action agenda is clear. The goals are finite. And the task is doable. We just have to have the political leadership, focus and will to act.

**Europe has a leadership role to play.** Europe has a lead role to play, not only in contributing resources, but also in removing obstacles to implementation, and getting the job done.

**We need to act now.** Time is of the essence. This is a race — a race between catastrophe and cooperation — that we cannot afford to let the terrorists win. In the case of the terrorist WMD threat, we cannot afford to wait for a first strike. Our challenge is to get our governments to take all the preventive measures they would aggressively pursue after a strike, without first having to endure a strike.

The day after a catastrophic terrorist attack, what will we wish we had done to prevent terrorists from acquiring these materials and conducting such an attack? And why aren't we taking these steps as urgently as possible now?

For additional information on Black Dawn and the Strengthening the Global Partnership project, please visit our website at [www.sgpproject.org](http://www.sgpproject.org).



## APPENDIX A >> Participants

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## APPENDIX B >> Experts and Observers

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## ABOUT STRENGTHENING THE GLOBAL PARTNERSHIP PROJECT

The Strengthening the Global Partnership project is a CSIS-led consortium of 21 research institutes in 16 European, Asian, and North American countries working to build political and financial support for G8 efforts to reduce the dangers from nuclear, biological and chemical weapons, beginning in the former Soviet Union. The Strengthening the Global Partnership project seeks to build that support by raising awareness of the WMD threat and creating a transnational coalition in support of increased and improved nonproliferation assistance. The project's goal is to ensure sustained financial support for and effective implementation of the G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. The Nuclear Threat Initiative is the primary sponsor of the project, which began in late 2001. Robert Einhorn and Michéle Flournoy coordinate the project. For more information see [www.sgpproject.org](http://www.sgpproject.org).

## ABOUT CSIS

For four decades, the Center for Strategic and International Studies (CSIS) has been dedicated to providing world leaders with strategic insights on — and policy solutions to — current and emerging global issues. CSIS is led by John J. Hamre, formerly deputy secretary of defense, who has been president and CEO since April 2000. It is guided by a board of trustees chaired by former senator Sam Nunn and consisting of prominent individuals from both the public and private sectors. Headquartered in Washington, D.C., CSIS is private, nonpartisan, and tax-exempt.

## ABOUT NTI

Concerned that the threat from nuclear weapons had fallen off most people's radar screens after the end of the Cold War, CNN founder Ted Turner asked former Senator Sam Nunn in the spring of 2000 to help assess whether a private organization could make a difference. Mr. Turner and Senator Nunn founded the Nuclear Threat Initiative (NTI) in January 2001. NTI's mission is to strengthen global security by reducing the risk of use and preventing the spread of nuclear, biological and chemical weapons. NTI seeks to raise public awareness, serve as a catalyst for new thinking and take direct action to reduce these threats. In addition to Mr. Turner and Senator Nunn, NTI is guided by an experienced, international Board of Directors who share a common goal of taking action to reduce the gap between the global threats and the global response.

## PHOTO CREDITS

**page 2** 9/11: FEMA photo library, [www.photolibrary.fema.gov](http://www.photolibrary.fema.gov)

**page 3** Gun type nuclear weapon design: Federation of American Scientists webpage, <http://www.fas.org/nuke/intro/nuke/design.htm>

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**page 6** 9/11: FEMA photo library, [www.photolibrary.fema.gov](http://www.photolibrary.fema.gov)

**page 8** Nuclear Control Panel at Pacific Northwest National Laboratory: <http://picturethis.pnl.gov>

**page 9** Ebola: Centers for Disease Control and Prevention, Public Health Image Library, <http://phil.cdc.gov/phil/default.asp>

G8 leaders: <http://www.g8.fr/evian/english/home.html>



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