

**THE INTERNATIONAL CRIMINAL TRIBUNAL  
FOR THE FORMER YUGOSLAVIA**

Case No. IT-06-90-A

**BEFORE THE APPEALS CHAMBER**

**Before:** Judge Theodor Meron, Presiding  
Judge Fausto Pocar  
Judge Patrick Robinson  
Judge Mehmet Güney  
Judge Carmel Agius

**Registrar:** Mr. John Hocking

**Date Filed:** 12 January, 2012

**THE PROSECUTOR**

v.

**ANTE GOTOVINA AND MLADEN MARKAC**

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**APPLICATION AND PROPOSED AMICUS CURIAE BRIEF CONCERNING  
THE 15 APRIL 2011 TRIAL CHAMBER JUDGMENT AND REQUESTING  
THAT THE APPEALS CHAMBER RECONSIDER THE FINDINGS OF  
UNLAWFUL ARTILLERY ATTACKS DURING OPERATION STORM**

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The undersigned all share interest and expertise in the relationship between military operational practice and international humanitarian law (also known as the law of armed conflict). Many of the undersigned are retired military legal advisors from land, air, and naval forces who served in both operational and legal positions in their respective armed forces. Three served as The Judge Advocate General (the senior military lawyer) for their respective military services; one served as the senior advisor for law of war matters for the United States Army. The collective military experience of the undersigned is approximately 290 years. Each shares a deep commitment to ensuring full compliance with and respect for the law of armed conflict. To that end, the undersigned have remained actively involved in efforts to contribute to the development of international humanitarian law in order to contribute to its continued evolution in a manner that reflects the core purposes the law has always effectuated: balancing humanitarian interests and protections with the ability of armed forces to efficiently accomplish their strategic, operational, and tactical missions. We collectively believe that preserving this balance is essential to the protection of humanity, the mitigation of suffering associated with armed conflict, and the credibility (and by implication efficacy) of the law among participants in hostilities. It is this collective interest that provides the common connection among the undersigned.

The undersigned respectfully request, pursuant to Tribunal Rule 74, leave to file the following Amicus Curiae Brief.

**Laurie R. Blank**

Laurie R. Blank is the Director of the International Humanitarian Law Clinic at Emory University School of Law, where she teaches international humanitarian law and works directly with students to provide assistance to international tribunals, non-governmental organizations and law firms around the world on cutting edge issues in humanitarian law and human rights. Professor Blank is the co-director of a multi-year project on military training programs in the law of war and the co-author of *Law of War Training: Resources for Military and Civilian Leaders* (USIP 2008, with G. Noone, second edition 2011). She is the co-author of an upcoming casebook on the law of war, *International Law and Armed Conflict: Fundamental Principles and Contemporary Challenges in the Law of War* (with G. Noone, Aspen Publishing 2013). In addition, she is the series editor of the ICRC's teaching supplements on IHL and a member of the American Bar Association's Advisory Committee to the Standing Committee on Law and

National Security. Before coming to Emory, Professor Blank was a Program Officer in the Rule of Law Program at the United States Institute of Peace. At USIP, she directed the Experts' Working Group on International Humanitarian Law, in particular a multi-year project focusing on New Actors in the Implementation and Enforcement of International Humanitarian Law. Professor Blank received a B.A. in Politics from Princeton University, an M.A. in International Relations from The Paul H. Nitze School of Advanced International Studies (SAIS) at The Johns Hopkins University, and a J.D. from New York University School of Law.

### **Bill Boothby**

Bill Boothby retired in July 2011 as Deputy Director of Legal Services (RAF) in the 1 star rank of Air Commodore, having served for thirty years as a member of the Royal Air Force Legal Branch in Germany, Cyprus, Hong Kong, Croatia and UK. In 2009, he took a doctorate in International Law at the University of Frankfurt (Oder) in Germany, publishing his doctoral thesis on Weapons and the Law of Armed Conflict through OUP the same year. A member of the Editorial Board of the UK Manual on the Law of Armed Conflict, the Harvard University-convened Group of Experts that produced the HPCR Manual of the Law of Air and Missile Warfare, the ICRC/TMC Asser Inst Group of Experts that considered "direct participation in hostilities" and the CCD/COE Group of Experts currently working to produce the Tallinn Manual on the Law of Cyber Warfare, he is currently finalizing *The Law of Targeting*, scheduled for publication by OUP in September 2012. He presents widely on international law issues and teaches at the University of London, Royal Holloway College.

### **Geoffrey S. Corn**

Geoffrey S. Corn is a Professor of Law at South Texas College of Law in Houston, Texas and a retired U.S. Army Lieutenant Colonel. His last position with the Army was as the Special Assistant to the US Army Judge Advocate General for Law of War Matters – the Army's senior law of war expert advisor. Other Army assignments included tactical intelligence officer, supervisory defense counsel for the Western United States; Chief of International Law for US Army Europe; Professor of International and National Security Law at the US Army Judge Advocate General's Legal Center and School, and Chief Prosecutor for the 101<sup>st</sup> Airborne Division. Professor Corn's publications focus on the Law of Armed Conflict, National Security Law, Criminal Procedure, and Criminal Ethics. He is the lead author of *The Laws of War and*

*the War on Terror*, published by Oxford University Press, a co-author of *Principles of Counter-Terrorism Law*, published by Thompson-West, and the lead author of the textbook *The Law of Armed Conflict: An Operational Perspective*, forthcoming with Aspen Publishers. He has published more than 30 articles and essays. He is a graduate of Hartwick College in Oneonta, New York, the George Washington University School of Law, and the Army Judge Advocate General's School, where he earned his LL.M. and was the *distinguished graduate*. His military education includes the U.S. Army Command and General Staff College, the JAG and Military Intelligence Officers Basic and Advanced Courses, and the U.S. Army Officer Candidate School.

### **William J. Fenrick**

Mr. Fenrick was a Senior Legal Adviser in the Office of the Prosecutor of the International Criminal Tribunal for the Former Yugoslavia from 1994 until the end of 2004. He was the head of the Legal Advisory Section and the Senior Adviser on Law of War Matters. At the ICTY, he provided international law advice to the Prosecutor and argued at the trial and appeal levels, particularly on matters related to conflict classification, command responsibility, and crimes committed in combat. He was also the main author of the Report to the Prosecutor on the 1999 NATO Bombing Campaign against Yugoslavia. Immediately prior to coming to the ICTY, he was a member of the SCR 780 Commission of Experts investigating war crimes allegations in the former Yugoslavia and, as such, he was responsible for legal matters and for on-site investigations. He was a member of the Canadian Forces from 1962-70 and from 1972-94. He was a military lawyer in the Canadian Forces from 1974 to 1994, specializing in law of the sea, law of war and operational law matters. At various times, he was the Director of International Law, Director of Legal Training, and Director of Operational Law. He was a major participant in the process which produced the San Remo Manual on the Law of Naval Warfare and he also participated in the process which resulted in the development by the ICRC of its guidance on Direct Participation in Hostilities. He has published widely on law of war matters, particularly on matters related to naval warfare and to prosecution of war criminals. He is a graduate of the Royal Military College of Canada (BA (Hons Hist) 1966), Carleton University (MA (CDN Studies) 1968), Dalhousie University (LLB 1973), and George Washington University (LLM 1983). At present he is living in Halifax, Canada, where he co-taught a course in International

Criminal Law (2005-9) and taught International Humanitarian Law (2006-11) at the Schulich School of Law at Dalhousie University.

**Professor C H B Garraway CBE**

Professor Garraway served for thirty years as a legal officer in the United Kingdom Army Legal Services, initially as a criminal prosecutor but later as an adviser in the law of armed conflict and operational law. He represented the Ministry of Defence at numerous international conferences and was part of the UK delegations to the First Review Conference for the 1981 Conventional Weapons Convention, the negotiations on the establishment of an International Criminal Court, and the Diplomatic Conference that led to the 1999 Second Protocol to the 1954 Hague Convention on Cultural Property. He was also the senior Army lawyer deployed to the Gulf during the 1990/91 Gulf Conflict. Whilst still serving, he taught international humanitarian law at King's College, London as well as acting as Course Director on the military courses run by the International Institute of Humanitarian Law, San Remo, Italy. On retirement, he spent three months in Baghdad working for the Foreign Office on transitional justice issues and six months as a Senior Research Fellow at the British Institute of International and Comparative Law before taking up the Stockton Chair in International Law at the United States Naval War College, Newport, Rhode Island in August 2004 for the year 2004/5. Professor Garraway was a Visiting Professor at King's College London from 2002 to 2008, teaching the Law of Armed Conflict, and is currently an Associate Fellow at Chatham House and a Fellow at the Human Rights Centre, University of Essex. In December 2006, he was elected to the International Humanitarian Fact Finding Commission under Article 90 of Additional Protocol I to the Geneva Conventions of 1949. He worked for the British Red Cross from 2007 to 2011 and now works as an independent consultant. He was appointed CBE in 2002. He has worked on a number of expert groups including the ICRC projects on "Direct Participation in Hostilities" and "Occupation" as well as the Harvard Program on Humanitarian Policy and Conflict Research project on air and missile warfare. He is currently the General Editor of the United Kingdom Manual on the Law of Armed Conflict and carries out a number of consultancies for Government and international organizations, including the Commonwealth Secretariat. In 2011, he chaired the Commonwealth Working Group that updated the Commonwealth Model Law on the International Criminal Court.

**Dean Donald J. Guter**

Donald J. Guter is the president and dean of Houston's oldest law school, South Texas College of Law. Dean Guter is the former dean of Duquesne University School of Law in Pittsburgh where he served from 2005 through 2008. Dean Guter served in the U.S. Navy for 32 years, first as a surface warfare officer and then as a judge advocate, retiring in 2002 as a Rear Admiral, Judge Advocate General's Corps (JAGC). He climbed the ranks of the JAG Corps, serving as trial counsel, legislative counsel, special counsel to the Chief of Naval Operations, and ultimately became the 37th Judge Advocate General of the Navy from 2000-2002. He has since served as the CEO for the Vinson Hall Corporation, the executive director of the Navy Marine Coast Guard Residence Foundation, the chair of the American Bar Association's standing committee on Legal Assistance for Military Personnel, and is an Outside Director on the Board of TYCO Corporation. Frequently appearing in the media to discuss matters of national security and military law, he has made appearances on network and international newscasts, print media nationwide, and radio programs.

**Walter B. Huffman**

Major General Walter Huffman, U.S. Army, retired, served 27 years as an Army Judge Advocate, including service as the senior legal advisor to a Corps Commander during Operation Desert Storm. His judge advocate service culminated in his selection as the Army's senior uniformed lawyer, The Judge Advocate General of the Army. Prior to obtaining a law degree and transferring to the Judge Advocate Generals Corps, General Huffman served six years as a Field Artillery officer and commanded firing batteries in the United States and in combat in Vietnam.

**Eric Talbot Jensen**

Eric Talbot Jensen is an Associate Professor at Brigham Young University Law School in Provo, Utah, where he teaches Public International Law, US National Security Law, Criminal Law, and the Law of Armed Conflict. Prior to his current position, he spent 20 years in the US Army, serving in various positions including as the Chief of the Army's International Law Branch; Deputy Legal Advisor for Task Force Baghdad; Professor of International and Operational Law at The Judge Advocate General's Legal Center and School; legal advisor to the US contingent of UN Forces deployed to Skopje, Macedonia as part of UNPREDEP; and legal advisor in Bosnia

in support of Operation Joint Endeavor/Guard. Professor Jensen is a graduate of Brigham Young University (B.A., International Relations), University of Notre Dame Law School (J.D.), The Judge Advocate General's Legal Center and School (LL.M.) and Yale Law School (LL.M.).

### **Mark E. Newcomb**

Mark E. Newcomb currently serves as Legal Counsel and Safety & Security Officer for CMA CGM (America) LLC, the general agent for *Compagnie Maritime d’Affretment – Compagnie General Maritime, S.A.*, supervising litigation and risk management programs related to CMA CGM's marine and inland operations throughout the U.S., as well as development, implementation, and evaluation of safety and security policies and programs. Prior to joining CMA CGM, Mark represented vessel owners, charterers, and insurers for Davey & Brogan, P.C., a maritime and admiralty firm in Norfolk, Virginia. A 1981 graduate of the U.S. Naval Academy, he served as a weapons officer and navigator in USS Rathburne (FF1057) from 1982-1985; in 1983 he led Rathburne's Naval Gunfire Support Team, winning the James F. Chezak Memorial as the U.S. Navy's top-rated NGFS platform. He received his J.D. from the College of William and Mary School of Law in 1988 and served in the Judge Advocate General's Corps until his retirement in 2001. In addition to other assignments, Mark served as the principal legal advisor to Commander, Battle Force Seventh Fleet, where he focused upon Law of the Sea and Law of (Naval) Warfare issues, and on the International Law faculty of the U.S. Army Judge Advocate General's Legal Center and School. A member of the Bar of the Commonwealth of Virginia since 1988, he is admitted to practice before the United States Court of Appeals for the Armed Forces, the Supreme Court of Virginia, and the United States Supreme Court. He is a Proctor Member of the Maritime Law Association of the United States, a Master with the I'Anson-Hoffman Inn of Court, and serves on the Adjunct Faculty of the College of William and Mary School of Law, teaching classes and seminars in National Security Law and Terrorism and the Law.

### **Thomas J. Romig**

Major General Romig served for four years as the 36th Judge Advocate General of the Army from October 2001 to October 2005. He led an organization of more than 9,000 personnel comprised of 5,000 active, reserve component, and civilian attorneys, and more than 4,000 paralegal and support personnel spread throughout 328 separate offices in 22 countries. He

oversaw a worldwide legal practice including civil and criminal litigation, operational law, international law, administrative law, labor and employment law, environmental law, claims, and ethics compliance. His other significant military legal positions included Chief of Army Civil Law and Litigation and Chief of Military Law and Operations for the Army. Some of his other military legal assignments included Chief of Planning for the JAG Corps; Chief Legal Officer for the 32d Army Air Defense Command in Europe; and Chief Legal Officer for U.S. Army V Corps and U.S. Army forces in the Balkans. Prior to becoming a military lawyer, he served six years as a military intelligence officer. Major General Romig graduated with honors from the Santa Clara University School of Law in 1980. After 34 years of service, he retired from the Army JAG Corps. Upon retirement from the Army, he served as Deputy Chief Counsel for Operations and Acting Chief Counsel for the Federal Aviation Administration in Washington, D.C. In July 2007, he became Dean of Washburn University School of Law in Topeka, Kansas. In 2009, the Kansas Bar Association awarded him its Courageous Attorney Award. This award was created to recognize a lawyer who displayed exceptional courage in the face of adversity, thus bringing credit to the legal profession. Dean Romig was presented this award for his time as the Judge Advocate General of the Army when he took positions against waterboarding and other extraordinary methods of interrogation that were in violation of the Geneva Conventions and the Uniform Code of Military Justice.

### **Colonel Raymond C. Ruppert**

Colonel Raymond C. Ruppert graduated from Fordham University, in New York City, in 1968 with a Bachelor of Science degree in Secondary Education and a Regular Army commission. He received his law degree from the University of Oklahoma in 1976. His service schools include the Armed Forces Staff College in Norfolk, Virginia and the Army War College at Carlisle Barracks, Pennsylvania. After completing the Infantry Officer's Basic Course at Fort Benning, Georgia in October 1968, he was assigned to the 4th Battalion, 325th Airborne Infantry Regiment, 82d Airborne Division as a support platoon leader. He was subsequently assigned as a rifle platoon leader to the 4th Battalion, 503d Airborne Infantry Regiment, 173d Airborne Brigade in the Republic of South Vietnam. He served in Vietnam from March 1969 to March 1970 completing his tour as an interrogation officer with the 172d Military Intelligence Detachment in Bong Son, South Vietnam. Upon his return to the United States, he attended the

U.S. Army Intelligence School, Fort Holabird, Maryland. He was then assigned to the 1st (Airborne/Mechanized) Brigade, 8th Infantry Division, Mainz, Germany as the brigade intelligence officer. It was during this assignment that he was selected for the excess leave program and permitted to attend law school. While attending law school, Colonel Ruppert was a member and an editor of the Law Review. Completing law school in 1976, he was assigned to XVIII Airborne Corps, Fort Bragg, North Carolina, where he served as a trial counsel and senior defense counsel. While serving at Fort Bragg, he was selected to attend The Judge Advocate General's Graduate Course in Charlottesville, Virginia. Upon completion of this course in 1980, he was assigned to Washington, DC where he served as Chief, Legislation Branch, Criminal Law Division, Office of the Judge Advocate General; Executive Officer, Defense Appellate Division, U.S. Army Legal Services Agency; and Deputy, Personnel, Plans and Training Office, Office of The Judge Advocate General. In 1985, he was assigned as the Staff Judge Advocate, 8th Infantry Division (Mechanized), in Bad Krueznach, West Germany. Upon completion of the Army War College in 1989, he served as the Staff Judge Advocate for U.S. Central Command where he participated in Operations Desert Shield and Desert Storm as General Schwarzkopf's Legal Advisor. In 1991, he became the Chief of the International and Operational Law Division, Office of The Judge Advocate General. From 1994 to 1996, he served as Legal Advisor to the United European Command in Stuttgart, Germany. He assumed the duties of Chief, Standards of Conduct Office, Office of The Judge Advocate General in July 1996. Upon his retirement in June 1998, he became Director of Continuing Legal Education for the North Carolina Bar Association in September 1998.

### **Gary Solis**

Professor Gary Solis served for twenty-six years in the United States Marine Corps. For eight years he was an armor officer, with two tours of duty in Vietnam, where he was a company commander and regularly employed 90mm and 105mm weapons. As a former fire direction center officer in combat, he is familiar with the issues discussed in the amicus curiae brief. Professor Solis was then a judge advocate for eighteen years, participating in many courts-martial. After military retirement, he earned a doctorate in the law of war from The London School of Economics & Political Science, where he then taught law for three years. Moving to the United States Military Academy, he directed West Point's law of war program for six years.

He next was a scholar in residence at the United States Library of Congress and currently teaches the law of armed conflict in Washington D.C., at Georgetown University Law Center and at George Washington University Law School. He teaches regularly at the International Institute of Humanitarian Law, in Sanremo, Italy, and he authored the textbook, *The Law of Armed Conflict* (Cambridge, 2010).

**Introduction: The Importance of this Amicus Curiae Brief to the Proper Disposition of this Appeal**

1. This Amicus Curiae Brief relates to the Judgment and Disposition of the Trial Chamber of 15 April 2011 in which the Trial Chamber determined, *inter alia*, that the HV forces commanded by defendant General Gotovina conducted unlawful artillery attacks during Operation Storm, to include unlawful artillery attacks against SVK military objectives located in the City of Knin. The Amici share a genuine interest in supporting the judicial decisions that encourage respect for international humanitarian law (IHL). These decisions contribute to clarity in the understanding and implementing of IHL by operational forces that engage in armed conflict. Recognizing the significance of any decision by this Honorable Tribunal addressing the relationship between IHL and operational targeting, and in particular the complex process of targeting in a populated area, Amici submit this Brief for the sole purpose of offering the Appeals Chamber the insights of military and civilian IHL experts who have studied, and in many cases applied, this complex process in hostilities.

The Amici understand that the Appeals Chamber will conduct a careful and thorough review of the application of established IHL rules and principles to the facts established in the Trial Chamber judgment in relation to attacks against military objectives in the City of Knin from 4-5 August 1995. Although judgments of this Honorable Tribunal do not by themselves create customary international law, they are consequential in this developmental process. In this regard, Amici believe some of the most significant positive developments in customary international humanitarian law in the past two decades, many of which sowed the seeds for treaty and national policy development, have been influenced by opinions of this Tribunal and its sister Tribunal, the International Criminal Tribunal for Rwanda. This Honorable Tribunal's seminal decision in *Prosecutor v. Tadic* defining situations that trigger the application of international humanitarian law in non-international armed conflicts is an obvious example.

2. The Amici believe that the "*Gotovina*" judgement has the potential to become the "*Tadic* of targeting law." Indeed, there have been few, if any, cases decided by an international criminal tribunal in recent history involving the type of complex operational

targeting decisions dealt with in this case. As the Trial Chamber acknowledged, this was not a situation of blatant indiscriminate attacks on civilian population centers, or groups of assembled civilians. Based on the Trial Chamber's own findings, the targeting in Knin involved placing numerous lawful military objectives located within the city under attack in an effort to disrupt and degrade enemy capabilities in support of a deliberate main effort attack against entrenched SVK defensive positions with the objective of breach and exploitation of those defenses. The Amici believe it is precisely this type of complex targeting that now defines and almost certainly will continue to define contemporary international and non-international armed conflicts. Accordingly, the Amici believe it is impossible to overstate the importance of the analysis and conclusions of any criminal adjudication of targeting decision-making in a context such as that reflected in the facts of this case.

**I. The Planning and Execution of Targeting Operations**

3. Targeting is the process by which a military commander brings combat power to bear against enemy military objectives in order to set the conditions for achieving tactical, operational, and strategic objectives. Targeting is a complex process, beginning with the commander's articulation of the mission, which is then translated into tasks for subordinate units. The targeting process begins with assessing potential enemy targets and defining the effects that must be achieved against those targets to contribute to mission accomplishment. Combat assets capable of achieving those effects are then "matched" to those targets, missions are executed in accordance with IHL, and effects are assessed. The targeting process is cyclical, continuing until the desired effect is achieved or the necessity for achieving the effect dissipates.

4. It is clear that international humanitarian law plays a crucial role in this process, both in the target selection and engagement phase. Only those persons, places, or objects that qualify as lawful military objectives pursuant to this law may be attacked. Furthermore, when attacks against such targets create an anticipated risk to civilians or civilian property, the commander is obligated to take all feasible precautions to mitigate this risk. This precautionary obligation extends to the selection of methods and means of attack, timing of the attack, issuing warnings to the civilian population, and cancelling an

attack when the anticipated harm to civilians or civilian property is considered excessive in relation to the concrete and direct military advantage anticipated.

5. The Amici have carefully reviewed the Trial Chamber judgment, with particular focus on the portion of the judgment addressing the allegation of unlawful attacks against the City of Knin. The Trial Chamber carefully considered and applied the relevant IHL principles, most notably the principles of distinction and proportionality, in assessing the criminal responsibility of the accused for the attack of 4-5 August 1995. The Amici agree that these cardinal principles provided the relevant legal standard against which to judge the legality of the artillery and rocket attacks directed against targets in Knin. Indeed, the Amici unquestionably agree that commanders who choose to target enemy objectives co-mingled among a civilian population must scrupulously comply with the IHL principles of distinction and proportionality. However, it should be appreciated that even the most scrupulous compliance with IHL cannot produce and does not require absolute perfection in the execution of an attack. Artillery and other indirect fire assets, by their very nature, involve a range of variables that will inevitably produce effects beyond the intended target. Even when using the most precise attack capability, such as precision-guided munitions, there is no guarantee that each and every effect will be registered against (and only against) the intended object of attack. IHL recognizes such reality by imposing an obligation on commanders to take all good faith efforts to mitigate risk to civilians and civilian objects resulting from this inevitable risk of error and from the ever present reality that attacks properly directed against lawful military objectives may occasion collateral damage or incidental injury to civilians and/or civilian property.

6. The Amici submit that the Appeals Chamber should recognize that no operational commander can guarantee absolutely perfect execution of even the most legally compliant targeting plan. Consequently, criminal responsibility for an allegation of unlawful attack must be assessed based on the totality of the available evidence. This assessment must establish the commander's state of mind based on the facts and circumstances reasonably available at the time he ordered the attack. Amici are confident that the Appeals Chamber will ensure that any judgment it issues is based on these core

principles of international criminal responsibility in relation to operational targeting judgments.

## **II. Applicable Legal Standards**

7. The perspectives offered by the Amici are based on application of core IHL principles. The Amici appreciate the high level of expertise in this law brought to bear by the judges, prosecutors, and defense counsel at your Honorable Tribunal. Indeed, Amici believe this collective expertise has been manifest in numerous ICTY decisions, many of which have positively influenced the evolution of international humanitarian law. We therefore deem it unnecessary to provide a comprehensive exposition of the law considered in relation to our collective perspectives. Instead, we seek to highlight what we believe are several critical legal norms applicable to the judgment of any targeting decision.

8. The Amici assume that the Appeals Chamber will likely follow the standard for targeting legality articulated in the *Galic* trial judgment. In that judgment, the Trial Chamber held that for an attack to qualify as a war crime, it “must have been conducted intentionally in the knowledge, or when it was impossible not to know, that civilians or civilian property were being targeted.” (*Galić*, ¶ 42 (quoting *Prosecutor v. Blaškić*; Case No. IT-95-14-T, Trial Judgment, ¶ 180 (3 March 2000)).) In other words, the acts of violence must be wilfully directed against the civilian population or individual civilians. Accordingly, we proceed on the premise that criminal culpability for targeting decisions requires proof that establishes beyond a reasonable doubt not only 1) that the commander intended to target protected persons or objects, or failed to exercise due care in the targeting process, but also 2) that the commander acted with this culpable state of mind based on the information reasonably available at the time he ordered the attack. If the commander made targeting decisions based on the situation as he reasonably believed given the “circumstances ruling at the time,” proof that his decision was in error is not dispositive of guilt. Only if the evidence establishes he knew or should have reasonably known the attack was unlawful at the time he directed it has he violated the law. In short, the legal standard does not impose an obligation to always be right: it imposes an obligation to make a reasonable decision based on the information available at the time.

Accordingly, a commander must not be found guilty of illegally targeting civilians or civilian objects based exclusively on a retrospective assessment of the evidence. The only valid basis for the criminal condemnation of a commander's targeting decision is proof of the commander's state of mind at the time the decision was made.

9. The Amici are confident that the Appeals Chamber recognizes the importance of assessing criminal culpability for targeting decisions based on the "circumstances ruling at the time." Both the laws and customs of war and the jurisprudence of international war crimes tribunals validate the conclusion that the legal standard for review of a targeting decision must be based on the assessment of the situation confronting the commander at the time of attack. Accordingly, Amici encourage the Appeals Chamber to carefully assess the application of this core principle of international criminal responsibility to the facts and circumstances reasonably available to the defendant at the time his forces engaged in attacks against targets in the City of Knin (as well as in Benkovac, Obrovac, and Gracac).. We are confident that in so doing, the Appeals Chamber will emphasize the importance of avoiding the distorting influence of *post hoc* assessments of targeting decisions and how such avoidance preserves the logic of international humanitarian law. Doing so will substantially contribute to preserving the balance every commander must consider when conducting military operations in order to maximize protection of the civilian population without compromising the authority necessary to accomplish a legitimate military mission.

### **III. The Relationship Between IHL and Rules of Engagement**

10. Because the contemporary employment of artillery and other direct and indirect fire assets is often regulated by Rules of Engagement (ROE), the Amici share a collective interest in ensuring comprehensive understanding of the relationship between IHL and ROE. While both these sources of authority establish operational level controls, they are not synonymous in either content or legal nature. Instead, ROE and IHL are two distinct sources of operational regulation. U.S. military doctrine provides a useful definition of ROE: "[d]irectives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered." (Joint Pub 1-02, Dictionary

of Military and Associated Terms; see also Int'l and Operational Law Dep't, the Judge Advocate General's School, US Army, JA-422, Operational Law Handbook 73 (2010)). ROE have become a key source of operational regulation in modern warfare and a key component of mission planning for U.S. and many other armed forces. (See Opn'l Law Handbook, supra at 84, Center for Law and Military Operations, Rules of Engagement Handbook, at 1-1 to 1-32 (1 May 2000)). Ideally, ROE represent the confluence of three important factors: Operational Requirements, National Policy, and IHL. (Richard J. Grunawalt, The JCS Standing Rules of Engagement: A Judge Advocate's Primer, 42 A.F.L. Rev. 245, 247 (1997)). Ultimately, by synchronizing these sources, ROE facilitate command and control over the execution of combat operations by subordinate forces.

11. It is particularly important to note that ROE are rarely identical in content to obligatory IHL principles. ROE will routinely be more restrictive than these principles. While it is essential that ROE must comply with IHL, it is both permissible and often logical to impose additional policy-based constraint on the execution of combat operations. The Amici therefore recognize that ROE may impose restrictions on the use of artillery in populated areas in excess of limitations on such use resulting from IHL compliance. Indeed, a number of the Amici have been personally involved in developing, reviewing, and implementing such ROE during the full spectrum of military operations. Because of this, Amici believe it is essential to ensure that criminal responsibility be assessed based exclusively on underlying IHL obligations, and not based on mission-specific ROE limitations periodically adopted by military commanders. The importance of distinguishing between ROE and IHL is highlighted by several specific considerations.

- A. ROE are not unitary in scope. Instead, the authorities and restrictions they impose will vary from operation to operation, and often times even between different phases of the same operation. For example, the restrictions imposed on the use of artillery assets will invariably be far more significant during peacekeeping operations pursuant to Chapter VI of the Charter of the United Nations than during military operations qualifying as armed conflicts.

- B. Even when ROE impose restrictions on the use of artillery assets against targets in populated areas, these restrictions are rarely immutable. Instead, ROE normally establish operational conditions authorizing deviation from these restrictions, such as when friendly forces are in contact with enemy forces in a populated area. Furthermore, it is rare that ROE categorically prohibit artillery use that would otherwise be consistent with IHL. Instead, commanders utilize ROE to reserve authorization authority to certain levels of command.
12. The Amici encourage the Appeals Chamber to recognize this interrelationship in order to ensure that any judgment of illegal attack against the City of Knin (as well as Benkovac, Obravac, or Gracac) was not the result of conflating traditional ROE restrictions with legal obligation. The Amici believe that doing so will enhance understanding of the relationship between targeting law and policy, and offset any risk that the judgment will undermine the importance of preserving the distinction between IHL and related ROE. Although a failure to comply with ROE may amount to a domestic military offense of failing to obey a lawful order, if the action is still in compliance with IHL, it will not amount to a war crime.

#### **IV. The Relationship Between Orders and Operational Execution**

13. When ordering attacks, commanders bear an absolute obligation to limit such attacks to lawful military objectives, order those attacks to be executed using lawful methods and means of warfare, and require compliance with all applicable IHL precautions (such as the requirement to cancel any attack that would violate the principle of proportionality). The Amici recognize the immense evidentiary challenges associated with adjudicating an allegation of a criminal violation of these obligations. Amici also recognize that any such adjudication must ultimately turn on whether the defendant acted with the requisite culpable state of mind.
14. Attacks are normally executed pursuant to a commander's orders, and therefore the Amici recognize the importance of such orders as evidence of a commander's state of mind. Indeed, the Amici fully appreciate why the Trial Chamber would consider the

explicit terms of the order to attack Knin, Benkovac, Obrovac, Gracac, and Drvar when it adjudicated the allegation of unlawful attack, and would consider it inexplicable had the Trial Chamber not done so. Without opining on the culpability of the defendant, the Amici also recognize that in the abstract, the terminology used by defendant Gotovina could be interpreted as an order to conduct an indiscriminate attack against Knin. However, the Amici encourage the Appeals Chamber to consider the common reality, based on our collective experience, that considering such explicit terms in the abstract can be quite misleading.

15. In this regard, Amici feel it will be useful to emphasize how the lack of operational legal review of orders will often contribute to imprecise terminology. One of the key functions performed by military legal advisors – called in U.S. and NATO practice “operational lawyers” – during combat operations is the review of orders and directives to ensure that legally ambiguous or confusing terminology is modified. The frequency of such modifications even in the most advanced and professional armed forces indicates that this type of generalized terminology is not uncommon in military orders. Amici believe this is an important consideration, as there is no indication the order to “place Drvar, Knin, Benkovac, Obrovac, and Gracac under artillery strikes” was subject to such review. Indeed, the testimony of Rajcic, General Gotovina’s Chief of Artillery, indicates non-legal members of defendant Gotovina’s military command prepared this order. Based on our collective experience, it is unsurprising that non-legal staff officers preparing an operations order under the pressures associated with on-going combat might use imprecise terminology.

16. Even when orders benefit from legal review, Amici believe it is essential to assess the consistency between the alleged illegality of an order and the effects produced by execution. Amici recognize that the Trial Chamber engaged in such an assessment. However, Amici encourage the Appeals Chamber to consider whether the factual findings of the Trial Chamber sufficiently corroborate the inference that defendant Gotovina intended by the terminology he utilized to in fact order an unlawful attack. Although it is not our goal to offer an independent assessment of the evidence presented at trial, we are compelled to highlight what we believe are indicators that the

methodology utilized by the Trial Chamber when assessing operational effects is inconsistent with operational practice and artillery capabilities.

- A. The Amici believe that the Trial Chamber quite properly sought to assess the nature of artillery effects resulting from the attack in order to determine the consistency between the allegation of a criminal state of mind and the criminal effects. The Amici are concerned however with the Trial Chamber's utilization of a 200-meter radius of error in order to determine which effects were attributable to lawful objects of attack and which effects were not. In the collective opinion of the Amici, this standard is fundamentally inconsistent with the realities of operational employment of artillery and other indirect fire assets (see attached Expert Statements). There is no military practice to suggest that a 200-meter radius is the norm in employment of artillery and other indirect fire assets. In addition, no support for such a standard can be found in the Trial record, or relevant expert reports.
- B. The Amici encourage the Appeals Chamber to carefully consider the expert opinions of former artillery experts and operational commanders submitted to supplement the appeals record. These opinions reflect a clear consensus that the standard applied by the Trial Chamber is operationally invalid and has no pragmatic foundation. As a result, the Amici are united in their concern that any judgment encouraging application of this 200-meter standard (or any standard of acceptable error that is not based on the actual realities of artillery and indirect fire employment) in future operations will subject military commanders to a standard of care that is impossible to satisfy and operationally untenable.
- C. Accordingly, Amici encourage the Appeals Chamber to carefully consider whether this 200-meter radius of acceptable error is: (1) sufficiently established by the Trial record, and if so (2) whether that radius is inherently inconsistent with the nature of artillery and indirect fire

capabilities and employment. If it is inconsistent, the Amici also encourage the Appeals Chamber to consider the long-term impact of endorsing a radius of legally permissible error for the use of artillery and other indirect fire assets in combat that is inconsistent with operational reality. Stated differently, Amici fear that adoption of an unrealistic operational standard will, in future conflicts similar to the one before the court, result in noncompliance with IHL balancing standards which may ultimately increase the risk of casualties among the civilian population by incentivizing efforts to immunize lawful objects of attack by co-mingling them with the civilian population and requiring commanders to comply with an impossible standard.

17. The Amici understand that assessing legality of attack effects requires some benchmark of acceptable error. In this regard, Amici encourage the Appeals Chamber to consider the consistency between the 400-meter standard proposed by Brigadier General Leslie and the realities of operational artillery employment highlighted by the supplemental filings. By substituting 400-meters as the benchmark for assessing attack effects in this case, the Appeals Chamber will send a powerful message that criminal responsibility for allegations of unlawful targeting decisions in future armed conflicts will be imposed only when the totality of the evidence is genuinely sufficient to support such allegations. In this regard, the Amici feel compelled to join the collective conclusion reflected in the supplemental expert statements that the evidence in this case did not rise to such a level of certitude (see Appendix 1, 2, 3, and 4).

18. The Amici also encourage the Appeals Chamber to carefully consider whether, even assuming a 200-meter radius of error, the factual findings of artillery effects are sufficiently consistent with an inference of intent to engage in unlawful attack. Considering the extent of unlawful effects is, in the view of the Amici, critically important precisely because of the reality that orders often are not issued with legally perfected terminology. While Amici believe that such orders may quite properly trigger inquiry into a commander's compliance with IHL, it seems axiomatic that where such inquiry indicates overall lawful execution, the commander should benefit from the

presumption that his orders and actions fully complied with obligations established by international humanitarian law, just as indications of overall unlawful execution would result in the opposite conclusion. Amici respectfully request that the Appeals Chamber carefully consider whether the 4% of overall effects unattributed to lawful military objectives sufficiently corroborates the defendant's alleged criminal state of mind (in this regard, Amici note that they have considered the legality of this attack as a whole in accordance with controlling international humanitarian law standards, and not as a series of isolated targeting actions). In the event it is considered useful to the Appeals Chamber, Amici feel compelled to express their collective conclusion that it does not. Furthermore, if the Appeals Chamber were to adopt the more operationally realistic radius of permissible error with the accordant adjusted ratio of legitimate versus illegitimate effects, this effects evidence appears even more inconsistent with the conclusion that the order establishes the defendant's criminal state of mind.

19. The Amici respectfully request the Appeals Chamber to consider our collective concern related to the relationship between the order issued by defendant Gotovina and the factual findings of artillery effects in Knin. This concern stems from our fear that condemning a commander for ordering an unlawful attack against civilians and civilian objects where the evidence indicates that the attack effects overwhelming impacted lawful military objectives may be improperly interpreted and relied upon in the future. At worst, such a methodology may contribute to what amounts to a strict liability standard of culpability; at best an implicit requirement that commanders be prepared to justify each and every effect produced by an attack. Even applying the 200-meter radius of acceptable error adopted by the Trial Chamber, approximately 96% of artillery effects impacted lawful military objectives; extending the radius of acceptable error to a more operationally rational 400-meters increases this percentage to approximately 99%. While Amici do not believe that the Trial Chamber sought to impose a strict liability standard, or to invert the burden of proof, it is difficult to reconcile these statistics (even in a light most favorable to the prosecution) to an unlawful target decision-making and execution process. Indeed, the Amici believe that almost any commander would consider such a ratio of valid to invalid effects to indicate legally compliant operations. We are therefore

hopeful that the Appeals Chamber will carefully consider whether the methodology used by the Trial Chamber indeed sufficiently supports the findings of unlawful attack.

20. The Amici are confident that the Appeals Chamber is cognizant of endorsing standards of criminal responsibility that strike the proper balance between operational reality and humanitarian obligation, and that imposing on a commander charged with unlawful attack even an implicit burden to prove the legality of each and every attack effect is inconsistent with this balance. This is precisely why evidence that actual artillery effects are overwhelmingly consistent with lawful target decision-making and engagement must be accorded powerful probative significance when assessing the legality of a commander's orders. Emphasizing this relationship will protect commanders from unjustified criminal responsibility based on orders resulting from necessarily hasty preparation, while emphasizing and preserving the efficacy of criminal responsibility based on assessment of the totality of the evidence.

**V. The Importance of Recognizing the Impact of Operational Variables When Assessing Operational Effects**

21. Consideration of actual attack effects is inevitably necessary when reconstructing an operational situation in order to assess criminal responsibility. Recognizing this necessity, the Amici encourage the Appeals Chamber to consider the full range of operational execution variables that impact artillery effects. As Amici anticipate the Appeals Chamber understands, no amount of planning and preparation can eliminate these execution variables and their impact on ultimate attack effects.

22. Variables impacting artillery attack effects range from quality of intelligence, quality of equipment, quality of munitions, location of fire support assets, training and capability of crews, weather, terrain, fatigue, and changes in enemy situation, and unanticipated time-sensitive targets, to mention only the most prominent (see Statements of Artillery Experts). Amici believe it is critical that in any criminal adjudication of an allegation of unlawful targeting, the impact of these variables be accorded appropriate weight when attributing actual attack effects to a commander's culpable state of mind. The Amici believe that the significance of such variables in the effects attribution process

warrants careful consideration *vis-a-vis* the attack effects in Knin, and that ensuring appropriate consideration of these variables will positively influence future investigations of alleged illegal attack effects. Perhaps more importantly, Amici believe that a failure to allocate operationally rational significance to these variables distorts the probative value allocated to attack effects by holding commanders to an unrealistic standard.

23. The Amici are cognizant that it will often be difficult to account for all relevant execution variables, and that this difficulty may accrue to the benefit of a criminal defendant. However, Amici also believe that this is an inevitable consequence of the requirement that the presumption of innocence be rebutted by proof establishing guilt beyond a reasonable doubt, with the accordant burden of production placed on the prosecution. We are confident that the Appeals Chamber is equally (if not more) cognizant of this aspect of subjecting operational decision-making to criminal adjudication. Accordingly, we believe that a careful treatment of this issue by the Appeals Chamber will contribute substantially to an understanding of the relationship between operational variables, the presumption of innocence, and burden of proof in criminal adjudications.

**VI. Enemy Leadership, Operational Significance, and the Proportionality Balance**

24. The Trial Chamber judgment indicates that the Trial Chamber concluded that the attack directed against the residence of Milan Martić, the Croatian Serb President and supreme commander of SVK forces, violated the rule of proportionality. The Amici believe that the Trial Chamber applied the principle of proportionality when assessing the legality of the attack, but that it did not assign sufficient value to the military advantage to be gained from the attack that a commander in defendant Gotovina's situation would have reasonably anticipated under the circumstances prevailing at the time. Proportionality is a foundational principle of international humanitarian law. As articulated in Article 57 of AP I, the rule obligates commanders to "refrain from deciding to launch any attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated."

25. As the Trial Chamber undoubtedly understood, compliance with the proportionality rule involves comparing the anticipated value of an attack with the anticipated risk of collateral damage and incidental injury to civilians and civilian property. Amici are confident the Appeals Chamber fully understands this comparative assessment. We also believe the Trial Chamber accepted Rajcic's recollection that the HV conducted a proportionality analysis of this target, but ultimately concluded that judgment of legality was unjustified under the circumstances prevailing at that time. We therefore seek to offer our collective perspective on the military operational value of disrupting the ability of a civilian supreme military commander of enemy forces to participate in the enemy's strategic and operational decision-making process. Such disruption is all the more vital in support of decisive military action against an enemy that is intended to isolate enemy defensive positions and exploit tactical success against such defenses. This perspective is offered to contribute to the Appeals Chamber's consideration of the propriety of the Trial Chamber's culpability determination related to the attack on the Martić residence.

26. In our collective experience, few targets are designated as higher in value than enemy strategic leadership. Disrupting the ability of such leaders to influence ongoing operations is traditionally anticipated to produce critically important operational effects favouring friendly forces. Indeed, it is an axiom of military operations that enemy command, control, and communications capability is always a high value target. Any assessment of compliance with the proportionality rule *vis-a-vis* enemy strategic leadership must account for this value attribution. Furthermore, Amici endorse the views of the two experts relied on by the Trial Chamber to reach its conclusion that artillery is often used to produce a harassing or disrupting effect on enemy command, control, and communication, and that the inability to achieve a destructive effect does not render artillery ineffective as a weapon to use against strategic leadership. We also note that because the Trial Chamber chose not to articulate the values it concluded must have been properly attributed to each side of the proportionality balance by the defendant, it is impossible to determine whether those values comport with traditional operational practice. Accordingly, Amici encourage the Appeals Chamber to consider whether the conclusion of illegality was in fact consistent with the anticipated extremely high value

any reasonable commander would attribute to disrupting a supreme commander's (Milan Martić's) ability to influence the battle, with the limited number of projectiles fired at his residence, and with the apparent absence of civilian casualties produced by those attacks.

27. Finally, although Amici recognize they are not in a position to pass judgment on the defendant, we do feel it is important to note for the Appeals Chamber our strong consensus that the attacks against Martić's residence fully complied with the proportionality obligation. Our conclusion is based on our review of the Trial Chamber record, which indicates that

- defendant Gotovina would have reasonably believed most of the civilians had left the residential area in the vicinity of the Martić apartment;
- Gotovina and his subordinates took great care to target only military targets and to avoid civilian casualties;
- Gotovina and his subordinates employed a limited number of projectiles against the residence building, indicating a reasonable balance between achieving a disruptive effect and limiting the risk of collateral damage and incidental injury;
- Gotovina could have reasonably sought to disrupt Martić's ability to influence strategic and operational decisions, including the ability to seek

support from the SVK's Serb allies, and this disruption would have reasonably been assessed as critical to operational success; and

- the effects of these attacks produced no civilian casualties.

## **VII. Conclusion**

As noted above, the Amici believe it is impossible to overstate the importance of the Appeals Chamber decision in this case. We are confident that your judgment will reflect a proper and operationally logical attribution of probative value derived from the effects of an attack, and the relationship between those effects and other evidence relevant to assessing a defendant's state of mind at the time of the attack. Such a judgment will contribute to maintaining an effective symmetry between the realities of military operations and the law that regulates such operations. As the Appeals Chamber undoubtedly recognizes, any judgment that is interpreted as attenuating this symmetry risks undermining the efficacy of international humanitarian law and the ultimate humanitarian objectives of the law.

Accordingly, the Amici respectfully request that the Appeals Chamber admit this Brief pursuant to Rule 74 of the Rules of Procedure and Evidence and reconsider and reject the findings of unlawful artillery attacks during Operation Storm.

All of which is respectfully submitted.

Dated: 12 January 2012

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**Report on Croatian Army ("HV") use of artillery and rockets on targets based in Knin, Croatia, August 4-5, 1995.**

1. Author of this Report. I am a retired United States Army Major General, with over 45 years of applied tactical and academic experience in the field of indirect fire operations, weapons and tactics. A summary of my professional and educational background is attached to this Report. I have been asked to review and report on my analysis of the Trial Record and Trial Chamber opinion relating to the case against Ante Gotovina, ICTY Case No.: IT-06-90-T. Specifically, this report analyzes the Trial Record of evidence related to approximately 900 rounds of indirect artillery and rocket fires in and around Knin, Croatia on August 4-5, 1995, during the HV offensive known as "Operation Storm." This report focuses exclusively on a technical and tactical assessment of the Knin-related weapon systems and artillery tactics employed by HV in order to establish reasonable standards of accuracy for the conditions and tactics used. This report offers no opinion as to the legality of the shelling in question under the law of war.

2. Materials consulted. In preparing this report, I reviewed the opinion of the Trial Chamber in *The Prosecutor v. Ante Gotovina and Mladen Markac*, ICTY Case No. IT-06-90-A; the Record of Trial; relevant doctrinal manuals on the tactical employment of rocket and artillery fires; studies of the capabilities and doctrine of Soviet artillery units; and general reports on the Croatian Army, circa 1991-1995.

3. Summary of conclusions. The key finding of the Trial Chamber was that "The HV deliberately fired artillery projectiles targeting [civilian] areas in Knin." (¶1906) The linchpin for that finding and the verdict it supported appears to be the following presumption: "[I]t is a reasonable interpretation of the evidence that those artillery projectiles which impacted within a distance of 200 meters of an identified artillery target were deliberately fired at that target." (¶1898). This report explains why this was not an appropriate standard of accuracy under the circumstances of this case. The tactical doctrine, materiel and firing method used by the HV artillery in fact would result in targeting and firing errors far greater than 200 meters. A compounding of errors traditional in such missions, in fact, would offer a radial error at least 400 meters. This is consistent with the testimony of Brigadier General Leslie,<sup>1</sup> who was the only witness to offer an opinion from the perspective both of military expertise and actual presence in the City of Knin at the time the attack occurred. Based on my knowledge of the equipment

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<sup>1</sup> General Leslie testified: "[W]hen using 130-millimeter guns or MBRLs, landing within a 400-metre radius of the target with the first shot would be 'acceptable.'" ¶1898.

the HV forces used in the attack, and the inevitable impact of execution variables in any use of indirect fire assets, this 400 meter standard is a reasonable conclusion.

#### Findings of the Trial Chamber Relied on For This Report

4. The Court found that General Gotovina's order to shell Knin was indiscriminate, treating the whole town as a target, without discriminating between military and civilian targets (¶1911). This ultimate conclusion by the Court was reached based upon the following premises:

(a) HV in shelling Knin on 4-5 August 1995 used 130mm guns from distances of 25 and 27 kilometers and 122mm BM-21 MBRLs from distances of 18-20 kilometers (¶1898);<sup>2</sup>

(b) HV fired into Knin at least 600 artillery projectiles (i.e. from guns and rockets) on 4 August and at least 300 artillery projectiles on 5 August. The Court was able to establish "only a portion" of the precise location of the impact points of these 900 rounds (¶1899);

(c) HV previously had identified at least six legitimate military targets in Knin prior to Operation Storm, using 10-digit grid coordinates (¶1898-1902);

(d) The Court applied the following standard: "[T]hose artillery projectiles which impacted within a distance of 200 meters of an identified artillery target were deliberately fired at that artillery target." (¶1898);

(e) At least 50 rounds impacted over 200 meters from any identified military targets (¶1906); hence those rounds were fired "deliberately" at non-military, civilian areas (¶1906 & 1909);

(f) At least 4 rounds impacted in the immediate vicinity of the Knin hospital, which was 450 meters away from a military target (¶1905);

(g) The number and dispersal of these impacts throughout Knin were too far away from identified artillery targets "to have impacted in these areas incidentally as a result of errors or inaccuracies in HV's artillery fire." (¶1906);

(h) There was no evidence of forward observers used by HV to direct fire on designated military targets or on targets of opportunity (¶1907);

(i) The order's wording: to "put Knin under artillery fire" without any additional words, is consistent with the deliberate firing on the whole town, including civilian areas outside of the 200 meter radius (¶1893 & 1911).<sup>3</sup>

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<sup>2</sup> Four separate artillery units fired on Knin:

- TS 3: 130m guns: 2
- TS 4: 130 mm guns: 5
- TRS 3: 122mm MBRLs: 2
- TRS 4: 12mm MBRLs: 3

<sup>3</sup> The Court also relied in part on the "sense of anonymous eyewitnesses in Knin" that the shelling seemed indiscriminate. While this report does not formally opine on such conjecture, lending any probative value to those lay impressions would be neither logical nor fair. Seasoned veterans might even feel as though the entire world was under attack in the midst of artillery fire.

### HV Artillery Doctrine in Operation Storm

5. The pattern of indirect fire reflected in the Trial Record strongly supports the conclusion that HV forces deployed assets to achieve the doctrinal (both US and Soviet) effects of neutralization and harassment. Specifically, this report reaches three critical conclusions: First, the weapons employed, Soviet 130mm guns and 122mm rockets, were well suited to achieve these effects. Second, accuracy of the weapons targeting and delivery of fire is consistent with missions doctrinally assigned to such assets for achieving these effects. Third, the number and relative lethality of artillery used in Knin actually fell far short of what would have been necessary to achieve a “destroy” effect, if anything, proving that the commander’s goal was not to destroy all targets in Knin, but rather, to disrupt and harass enemy operations.

The pattern of fires also supports a very significant conclusion: HV forces in fact were not attempting to apply Soviet era artillery doctrine (which was defined by the overwhelming use of indirect fires to achieve all designated effects). This conclusion is based on my determination that the fire patterns in Knin fell far short of the volume of fires called for by Soviet era doctrine to achieve even a neutralization and harassment effect. Instead, HV forces applied a much more tailored, discrete and reasoned pattern of fires to achieve these effects. Indeed, the evidence confirms that the HV’s timing, area coverage, rate of fire and lethality of munitions on Knin targets were appropriate to the effects desired by the firing unit and the mission, from a military perspective.

- Effects: Not one target engaged suffered the Soviet 25% norm for neutralization fires. Total casualties are unknown, but most artillery missions caused no casualties whatever.
- Duration: HV missions fired on targets within Knin were conducted in two phases: (1) neutralization fires to cause damage to Knin-based Serbian forces; (2) harassment fire over several hours to distract and psychologically disorient Serbs as HV maneuver forces approached the city. Rate of fire for both missions was far slower and more deliberate than would be expected from Soviet artillery. Trial evidence confirms that HV gunners were instructed to “fire using gunner’s quadrant,”--a technique requiring elevation settings on the gun sight to be double checked using a separate instrument. Two checks for each mission doubles the time between individual firing.

6. Artillery missions in both U.S. and Soviet doctrine generally are classified as direct (DS) or general support (GS). Direct support missions employ “observed” fire and general support missions are predictive (unobserved, or “shooting off a map”) fires:

- Direct support (DS) fires: DS fires support the infantry in contact with the enemy. DS targets, called “point targets,” include very small, discrete individual infantry fighting positions or fighting vehicles, that is, targets that cannot be effectively engaged without

visual adjustment by an artillery observer attached to a front line unit. Artillery units normally embed forward observers with the infantry, both in training and in combat. With direct observation from the front lines, DS artillery fire is both flexible and precise. Well-trained artillery observers can “call for” fire normally using direct radio communications. DS artillery teams are able to fire on static “targets of opportunity” in about 5-10 minutes, depending on factors such as the need to re-lay (or re-orient) the guns in a new direction and clearance of fires to ensure that the target is legitimate and not a friendly unit, as well as the skill of the artillery fire direction and crew personnel. Only light and medium artillery as well as mortars are used in the DS mission, because their intrinsic range and deflection probable errors (10 meters or less) are less than the separation distances between infantry forces. Also, the lethal areas of these weapons are relatively small, usually less than 20 meters. The optimal calibers in NATO forces for the DS mission are 105 and 155mm howitzers and 81 and 120 mm mortars. Comparable caliber in Soviet artillery is the 122 howitzer. Rockets are never used for DS. Due to the decreased accuracy of their fires, I know of no instance in which long range counter fire pieces such as the 130 mm gun have been used in this category of mission.

- General Support (GS) fires: In contrast to DS fires, the GS mission provides unobserved, longer range fires. GS targets are either “area targets,” or “point” targets, which are associated with DS missions. As the name suggests area targets are often located deep in the enemy’s rear, and include such targets as enemy artillery (counter-fire), logistic installations, command and control facilities, nodes, clusters of static enemy facilities, lines of communications (interdiction) and choke points. Types of GS fires include unobserved fires delivered supporting a maneuver operation, and fall into three categories:
  - Preparation (Soviet neutralization fires): These are the most common GS mission fires, and seek to damage to enemy facilities and personnel and thereby facilitate advance of maneuver forces. Properly employed these fires start before the advance and end before advancing troops enter the artillery impact zone.
  - Harassment fires: these fires seek to keep the enemy distracted and unable to react to an approaching maneuver force.
  - Counter fire: As the term suggests, such fires target enemy indirect fire units seeking to destroy or distract the enemy’s artillery before, during and after an attack. A few Serbian mortars located inside Knin were targeted by HV artillery. It therefore is possible some missions were intended to be counter fire.

7. Missions fired against Knin in Operation Storm, by definition, were GS fires by long range rockets and guns designed for that purpose. Most targets were single rather than groups of

targets, pre-determined in the planning process and attacked based on intelligence available to the commander. Individual fire missions were directed against relatively small area targets, such as command and control facilities, where lethal effects are achieved by selecting a single point of aim, allowing the natural wide dispersion of such fires to cover the target.

As discussed above, fired at the same target, all artillery rounds land in a roughly elliptical pattern. The probable errors for firing tables translate these elliptical patterns into rectangles for ease of calculation. The range axis of the rectangle is termed the range probable error (PEr) and the deflection (azimuth) variation is termed the deflection probable error (PEd). Each PE measures one standard deviation as defined as a rectangle that would (all other errors being discounted) contain 50% of rounds fired. Three PEs would, again in theory, encompass all of the rounds fired. Howitzers are relatively high trajectory systems and tend to have low PEs. Guns fire very flat trajectories and against flat targets will have much larger PEs. Gun PEs are much larger in range than deflection. Rocket PEs are reversed with the deflection PE much larger than range because of the greater influence of lateral wind on a rocket in flight. For instance, the probable errors for a Grad rocket firing at 19,000 meters (a range selected for the Knin mission) were 82 meters in range and 125 meters in direction. One probable error (PE) defines the area into which 50% of the rounds will impact. Three probable errors will, under ideal circumstances, embrace an area into which all rounds will fall. Thus, a single area target engaged by a single rocket launcher, under ideal circumstances, will cover an area of 375 x 246 meters. However, other sources of error (discussed below), e.g., launcher displacement, wind, and target location, will cause the actual area covered to be greater than this area.<sup>4</sup>

#### Factors Bearing on Accuracy of Fires

8. Mathematically derived data from firing tables for any artillery asset cannot account for all sources of artillery error.<sup>5</sup> In fact, as noted above, GS artillery system accuracy is subject to

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<sup>4</sup> It must be noted that the Court specifically found that HV use of BM-21 MBRLs against Knin in Operation Storm "was not inherently indiscriminate." (¶1897)

<sup>5</sup> In 1969 I had the unfortunate experience of being subjected routinely to fire from Soviet 122 mm rockets fired from Laos into the A Shau Valley and long range 130mm guns fired from across the Demilitarized Zone in North Vietnam. I can testify personally to the inherent inaccuracy of these weapons. In the first instance for about three months my unit was dug in as part of a brigade firebase (Fire Base Bertesgaden), a facility that encompassed a rough oval about 400 meters by 150 meters. The range from Laos was about 11,000 meters. Of the hundreds of rockets fired against us, fewer than twenty landed inside the base. Only two of my soldiers became casualties from rocket fire. I received 130mm gun fire when occupying Fire Base Bayonet located about three kilometers south of the DMZ. The North Vietnamese Army fired dozens of rounds against us. Not one ever landed inside our perimeter. It is instructive to note that mortars of all calibers caused very serious casualties within my unit. Mortars still

many sources of error, both human and materiel. In my opinion the Trial Chamber did not adequately consider the full impact of these execution variables in assessing the effects of HV artillery on Knin-based targets. This is operationally unrealistic and extremely problematic, for it assumes that all assets achieve execution perfection. Artillery experts the world over will confirm that such perfection is a factual impossibility. Accordingly such experts would assess probable error in distance and attribution of effects that appear isolated from defined objectives by considering all of the factors that impact on execution accuracy. In the context of this case, the following factors would almost certainly have had a substantial effect on the accuracy of fires at defined military objectives within the City of Knin:

- Range: All rockets and artillery are less accurate at the outer limits of range. First, the longer the flight of the projectile, the greater will be the influence of wind and weather on its accuracy. Second, greater range amplifies any error made at the firing position. For instance, a one degree aiming error made at the guns will cause a 14 meter error at 1,000 meters. But at 30,000 meters that error will increase to over 530 meters. Both the 130mm and 122m systems in this case were fired at the extreme limits of range (122mm MBRLs, 19,000 meters and 130 guns, 26,000 meters) .
- Meteorological conditions: This constitutes the single greatest source of deviation from firing tables and thus the largest source of error at the target. This is why all western artillery units have organic meteorological sections, and their on-site measurements of current conditions are critical for GS missions. For rocket units, surface conditions are most critical. All free flight rockets, like the Soviet BM-21, burn for only a short time, and then follow a ballistic trajectory to the target. During the burn phase only a slight wind hugely magnifies the rocket's error (thrust vector). The rocket's ballistic ( e.g., unpowered) phase of flight presents a dramatically larger cross section to the wind than shells, and are much more thrown off target by the slightest deviation from standard met conditions used in calculating firing tables.<sup>6</sup>

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remain the greatest killers of American soldiers. It is also important to note that the 130mm units that opposed us were very well trained and equipped. By the time I occupied FB Bayonet these guns had been firing for over two years from very well protected artillery bunkers and caves.

<sup>6</sup> A first rate rocket system such as the U.S. MLRS is designated as a "two mil" weapon, meaning, under ideal conditions, that the trajectory's standard deviation will result in a two mill error at the target. This means that normal conditions will create a two meter error for every thousand meters of range. Failure to calculate ground level met immediately before firing renders the MLRS a 6-to- 9 mil weapon. At maximum range this results in a deviation of at least 180 meters. Again, this error must be added cumulatively to all other sources of error described below. It is also very important to note that post-WWII Grad system technologies at issue here, unlike the later, post-Vietnam advances incorporated into the MLRS lack the MLRS advancements in rocket technology.

- Target location: Ideally, for long range fires all targets would be determined to ten meter accuracy, using some form of precise calculation, such as survey or laser measurement from aerial platforms. The HV artillery appears to have relied generally on classic “map spot” techniques<sup>7</sup> which, at the very least, introduced a target error of 100 meters--and likely somewhat more. Historical evidence from Vietnam confirms an average target location error of 250 meters, which proved to be the largest single factor of error for the entire artillery system of fire.<sup>8</sup>
- Battery location: Precise location of the firing position is critical to accuracy of fire. Any error, however small, will be amplified as the range to target increases. The most accurate means for battery location is geographic survey. None of the artillery pieces employed in the Knin missions were surveyed. They were located using the “resection” technique.<sup>9</sup> Typically, use of resection results in about a 100 meter error depending on the precision of the observing instrument and about 200-300 meters using map spot.
- Azimuth of fire: For long range systems such as the 122mm MBRLs and 130mm guns, a very precise calculation of the azimuth of fire (or direction, “deflection” in U.S. doctrine). Each mil of error in direction (a mil is 1/6400 of a circle) results in one meter of error for every 1,000 meters of range to the target. At best, HV artillery appears to have set direction by either a Soviet compass (creating at least 10-15 mil error, on average) or by an aiming circle from the firing position, giving rise to 5-10 mils of error. For example, 10 mils of error would result in 250 meters deviation from the target at 25 kms (i.e., the range of the 130mm guns in this case).
- Ammunition lot: Ammunition selected for specific fire missions normally will come from the same “lot,” which is a numerical stamping on rockets, propellant and projectiles indicating the manufacturing “batch” of each artillery component. Lot designation is crucial because every manufacturing process alters the performance, which in turn can cause a variation in terminal effects and is particularly important for rocket and gun propellants. Different lots on a firing point become more critical for old propellants or propellants exposed to weather for over one day. Evidence of lot discipline from the

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<sup>7</sup> “Map spotting” is the art of associating features on a topographical map to surrounding terrain. Association yields a grid, a three to six digit Cartesian coordinate, that the unit can use to locate targets and positions.

<sup>8</sup> The best source of target accuracy in Vietnam comes from US Military Assistance Command Vietnam Reports. See “The Forward Observer of the Big Red One.” Operational Report of Headquarters, II Field Force Vietnam Artillery for the Period Ending 31 January 1969. Pg 33.

<sup>9</sup> Essentially a position location derived from a mathematical calculation of the battery location from several distant observation points or they were “map spotted” using 1:50,000 topographic maps. These maps provided very imprecise locations for the firing batteries.

Knin missions is conflicting. Even assuming the best of circumstances, artillery mixed storage lots stolen from Yugoslavian ammunition depots were likely from many mixed lots. There is no evidence that the HV units in this engagement aggregated common lots or separated out those “odd” lots, without which this can become the greatest source of error for mass, unobserved fires.

- “Outliers”. About one round in every hundred for advanced systems and one in 50 for older systems manufactured during the Cold War occasionally impact outside the normal radius. Reasons for such variance are many, but usually attributed to flaws in the manufacture of ammunition. Soviet era ammunition is more prone to outliers than contemporary western ammunition.<sup>10</sup>
- Platform stability: The 130mm gun fires from four points of contact with the ground (two wheels and two trails), and is well known as a very stable platform for a gun of such power. This is not the case for BM21 MBRLs. The HV BM21s carried racks of 36 or 40 rockets. Conventional doctrine calls for these racks to be emptied in “ripple fire”(automatic, sequential triggering) with only a second or two between rockets. If the truck/launcher is not on firm contact with the ground, each rocket discharge will move or “rock” the launcher and result in a very large range dispersion during firing. There is no way to recreate conditions on the ground in Knin, but the range dispersions shown on the survey charts for some of these targets suggest rocket range “creep,” which could mean that some of the launcher vehicles were not adequately grounded.
- Registration: Many errors noted above can be reduced if firing units are able to “register” targets using live fire.<sup>11</sup> The most accurate means of registering is to fire a set of adjusting rounds from every major firing unit directed toward the target’s vicinity. Fire direction officers would then calculate the difference between the firing table data (“should hit”) versus the actual data to hit the target during registration (“did hit” data). These data would then be transferred to and used for all the pieces firing. Target

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<sup>10</sup> In interviews and reports I reviewed for my book “Certain Victory”, the official account of the First Gulf War, Iraqi artillerymen were critical of Soviet rockets. Iraqi artillery consisted of many types, Soviet, French, and even some U.S. systems bought on the black market. In contrast to armor and infantry units, Iraqi artillery and engineer officers proved to very competent and well-educated. They were particularly helpful in describing why their systems often were ineffective during the war. They spoke of premature detonations, often from inside the tubes, duds, and numerous instances of long and short rounds. While their testimony must be taken with a grain of salt, evidence of poorly performing Soviet era ammunition and systems is clearly pertinent in analyzing sources of stray rounds in Knin.

<sup>11</sup> Registration is less important today, thanks to digitized firing data calculations and the ability now to observe from aerial platforms. But pre-digitization, no American artillery unit would be permitted to fire a GS preparatory and harassment mission without first registering.

registration often is not possible because it would tip off the enemy. Next best is “off set” registration fired in a direction away from the enemy. An off set technique is of little use without an accurate and timely meteorological message. It does not appear that the HV artillery or MBRLs had the opportunity to register targets at Knin. Use of registration fires doubtless would have compromised the attack’s shock effect, which was intended to briefly, albeit decisively, disrupt enemy command, control, and communication to support the deliberate attack against the enemy improved defenses outside the city. In this regard, I must emphasize that registration fires, while advantageous for improving accuracy, are not required and normally would not be employed in relation to an attack such as that conducted by the HV.

- Condition of materiel: The quality of materiel in the HV units was questionable. Testimony suggests that much of the equipment and ammunition was dated Soviet era equipment (which we can infer was not even the best the Soviet Union had to offer as that equipment was always reserved for Soviet forces). It therefore is almost self-evident that failure to consider all the variables identified above seriously weakens the Trial Chamber’s analysis and its resulting conclusions on the accuracy of fires. Ultimately, the Trial Chamber was assessing use of old equipment of questionable quality, not the most modern or well-maintained equipment associated with a NATO force.

#### A Rational Radius of Error for Conduct of Fires at Knin

9. The foregoing considerations all bear on identifying an operationally rational radius of expected error for HV indirect fire missions on Knin-based military targets. I have considered these factors in relation to the Trial record’s evidence of fires (diaries and firing accounts, as well as the testimony from observers in the Trial Chamber). Fires against targets in Knin were delivered by four units on 4-5 August 1995. Over two days these units fired a total of approximately 900 rounds. As stated above, the Trial Chamber concluded that any round that any projectile that landed outside a 200 meter radius from a legitimate pre-determined military target was presumed to be indiscriminately aimed at civilian targets. According to the Court, only 50 projectiles impacted outside the “200 meter rule.” This constituted less than 6% of the total rounds fired during the preparation, harassment and counter fire phases of indirect fire operations at Knin.

10. The foregoing evidence confirms that the Trial Chamber’s conclusion as to reasonable radius of error was far too restrictive. Errors inherent in all artillery missions require an operationally realistic radius of error when assessing the legality of the targeting process. Even the most competent NATO artillery equipment, planning, and mission execution would be hard pressed to place 94% of unregistered and unobserved fires delivered at the extreme limits of range

inside a 200 meter radius of the intended target. A 200- meter standard would be further undermined by all of the inherent shortcomings of HV artillery explained above, with special emphasis on the following factors:

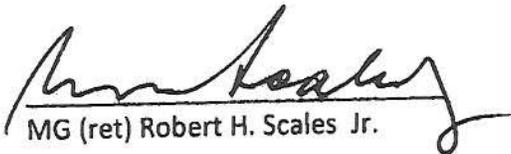
- The most telling technical shortcoming of HV artillery operations at Knin was the lack of an accurate meteorological message prior to firing. A failure to measure low level winds in particular could have added as much as 1,000 meters to the deflection probable error of MBRL fires. Other factors would further compound failure to account for low level winds.
- Firing batteries were located using a “map spot” technique that could have reduced by at least 100 meters or more to target accuracy. The azimuth (direction) to the target was determined using a compass. This technique at best would yield a one degree error at the target end of the trajectory. One degree at extreme range would induce a 330 meter error at a range of 25,000 meters.
- Quality of artillery materiel, guns, rocket launchers and ammunition was highly questionable. The rockets in particular could not have performed to Soviet accuracy standards given they originated from different manufacturing lots.
- Training and experience of HV artillerymen, both officers and gunners, must be considered. It is logical to infer that most if not all of these personnel were inexperienced gunners. The stress of firing in combat conditions by inexperienced troops increases the odds of gunnery errors, shell and charge selection and target identification, sometimes dramatically. Record keeping and target spotting was such that conclusively identifying outliers is not possible but it would be entirely reasonable to conclude that some of impacts that deviated away from planned targets were caused by human errors induced by the heat and fog of war.

11. Even if every aspect of the fire mission conducted on 4-5 August 1995 were executed to perfection, the intrinsic “Probable Error” of the 130mm gun and MBRL would have placed some of the rounds fired well outside of a 200 radius. According to testimony one range probable error for the 130mm gun at the ranges engaged in Knin was 26 meters left and right of the target (PEd) and 75 meters in range (PEr) (¶1898). All rounds fired perfectly would fit inside an ellipse of 3 probable errors or 78 by 225 meters. Three probable errors for the MBRL at the average range fired here would exceed 200 meters (375 PEd and 246 Per). Thus if every technical aspect of every mission fired were perfect, normal dispersion alone would result in some small percentage of rockets and shells landing outside a 200-meter radius.

12. The conditions and capabilities of the HV artillery during Operation Storm render a 200 meter standard totally unrealistic. Court expert Andrew Leslie testified that "when using 130mm guns or MBRLs, landing within a 400 meter radius of the target with the first shot would be acceptable." (§1898). All rounds at issue fired on 4 and 5 August were both unregistered and unobserved. Thus, tracking doctrine, all 900 rounds effectively were "first rounds," since none of the rounds fired over two days could have been adjusted closer to the target than the initial rounds fired. Considering all factors analyzed above, the 400 meter radius is a more accurate and realistic standard to use in evaluating the 900 rounds at issue.

#### Conclusion

13. In conclusion, even accepting as properly applicable court expert Andrew Leslie's testimony that a first round error of 400 meters was "acceptable," applying a 400-meter standard to Knin, only one of some 900 rounds would have exceeded acceptable tolerance. For reasons explained above, the evidence appears overwhelming, if not conclusive, that doctrine, materiel, and common ballistic error readily explain the HV artillery missions relating to Knin. Indeed, simply disregarding the myriad sources of common ballistic error, as it appears was the case in the Opinion here under review, would expose to criminal prosecution an untold number of combat military officers who did no more than follow indirect fire doctrine that has been universally accepted for decades, both within the United States and throughout the world.

  
MG (ret) Robert H. Scales Jr.

Attachment A (Biographical Summary)

### The Author

The author of this report, MG (Ret) Robert H. Scales, is one of the preeminent authorities in the world on artillery and indirect fire. A 1966 graduate of The United States Military Academy at West Point, General Scales commanded artillery and rocket batteries in Germany, and two cannon batteries in the Vietnam Conflict. During the Battle of Dong Ap Bia ("Hamburger Hill"), he was awarded the Silver Star, one of the highest honors the United States bestows for courage under fire.

General Scales earned his PHD in Military History at Duke University (1976), writing his thesis on "Artillery in Small Wars." As a major, he headed the Modern Battlefield Techniques Committee at the Artillery Training Center, which was responsible for reviewing and revising doctrine and concepts based on the most current Soviet and American artillery developments. He later commanded the 1<sup>st</sup> Battalion, 17<sup>th</sup> Artillery in Korea, the unit responsible for providing fires to the Joint Security Area in the DMZ.

As a colonel, he commanded the Artillery Training Center at Ft Sill, Oklahoma, which is responsible for training all artillerymen in the U.S. Army, and also trains artillerymen the U.S. Marine Corps and from NATO and other allies. Following this command, he served as Chief of Staff of the Artillery Center, and later as Assistant Division Commander in Korea, where he developed the Korean counter fire system for attacking North Korean artillery in event of war. General Scales' concepts for counter fire later formed the basis for the future development of artillery doctrine and materiel by the Defense Science Board and the Defense Advanced Projects Agency (DARPA).

As a major general, Scales was appointed by the Army Chief of Staff to lead a comprehensive assessment of future ground warfare based on Gulf War lessons learned. Scales' academic achievements include six books and over two hundred scholarly articles on doctrine, military history and future warfare. His doctoral dissertation from Duke University, "Artillery in Small Wars," was the first scholarly effort to investigate the impact of limited warfare on artillery doctrine.

His 1990 book, "Firepower in Limited War," is widely-accepted today as the most authoritative work on post-WWII firepower doctrine. It investigates British, French, American and Soviet artillery practices from Vietnam to Desert Storm, including the Soviet use of artillery in Afghanistan. He is the principal author of "Certain Victory," the Army's official account of the First Gulf War, and "The Iraq War," the first published account of the second Gulf War. His book, "Yellow Smoke," written in 2003, investigates the future of ground warfare. He is the only serving officer to have books placed on the official reading lists of three armed services.

Following retirement, Scales has been a frequent television commentator on military operations, and frequent lecturer and guest at the Fires Center of Excellence (The Artillery Center). He is responsible for changes in artillery doctrine in Iraq and Afghanistan. He has visited artillery units in Iraq and Afghanistan on four occasions since 2005 and filed reports of his visits to General David Petraeus, then commander in Iraq, General James Mattis, Central Command Commander, and ADM Michael Mullen, Chairman of the Joint Chiefs of Staff. In 2009, he authored a study of his visits to Iraq and Afghanistan for the Center for a New American Security, the most influential defense think tank in Washington, entitled "The Past as Prologue."

**Comments by LTG(Ret) Wilson A. Shoffner on The  
Report by Major General Robert H. Scales on Croatian Army (“HV”)  
Use of Artillery and Rockets on Targets Based in Knin, Croatia August 4-5, 1995.**

1. **Author of this Report:** As introduction, I am a retired U.S. Army Lieutenant General who spent 32 years on active duty as a combat arms officer. My final post was Commander of U. S. Army’s Combined Arms Command and Commandant of the Command and General Staff College. My basic branch was Field Artillery and I served with Field Artillery units in combat during the Vietnam War. I have comprehensive education, training and practice with artillery cannons, rockets and missiles, extensive experience in Operations Research and Systems Analysis and am very familiar with the application of statistical theory to practical battlefield problems. My relevant experience:

- Entered the Army as a Second Lieutenant of Field Artillery after graduating from Oklahoma State University with a degree in Mechanical Engineering.
- Graduate of the Army’s course of instruction on Guided Missile Systems Theory.
- Project officer for test and evaluation of Rockets and Missiles with the Artillery Board which required frequent application of statistical processes and analysis.
- Instructor on Rockets and Missiles in the Field Artillery School.
- Operations officer and executive officer of a direct support cannon battalion during combat operations in Vietnam.
- Repeated combat development assignments in the Army with frequent requirements for application and supervision of Operations Research and Systems Analysis.
- As a senior Colonel, responsible for oversight and direction of all Operations Research and Systems Analysis within the Army’s Training and Doctrine Command.
- As a Major General, responsible for review and approval of all requirements for new materiel for the Army and the supporting test, evaluation and analysis associated with those systems.
- As Commanding General of the 3<sup>rd</sup> Infantry Division and Assistant Division Commander of the 1<sup>st</sup> Cavalry Division, directly responsible for training and operations of combined arms units and the practice of employment of artillery integrated with maneuver systems.
- As Commanding General of the Combined Arms Command, responsible for global oversight and direction of the Army’s war games, as well as analytic and training simulations which include detailed modeling of the integration of artillery fires and combat maneuver systems.

Throughout my time in the Army, the principle threat was the Armies of the Warsaw Pact and it was my avocation, if not passion, to be an expert on the Soviet Army, their weapons systems, their command and control process, their procedures for the design of campaign plans and their theory and practice for the application of fire and maneuver known as the Correlation of Forces and Means.

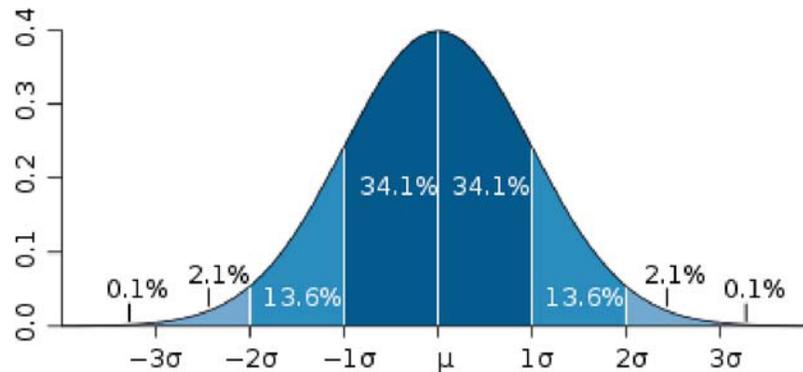
Given the experience above, I am therefore qualified to address the paper written by Major General (Ret) Robert H. Scales from the perspective of theory and practice of both the US and Russian artillerists.

2. **Findings:** After carefully reviewing the report, subject as above, by Major General (Ret) Robert H. Scales, I agree without exception with his observations and conclusions regarding the em-

ployment of artillery fires by Croatian forces in the battle at Knin on 4 and 5 August 1995 during "Operation Storm". Given that these targets were militarily important and the artillery and rocket weapon systems available to the commander, the number of rounds fired over the two days is not considered excessive. My experience in similar circumstances in combat would often have exceeded the 900 rounds over the two day period by a factor of two. The conclusion by the court that any artillery projectile or rocket impacting more than 200 meters from the aimpoint was intentionally aimed at the populated area nearby is simply wrong. There is no scientific, mathematical or practical justification for such a conclusion. From the dispersion characteristics of the weapons used and reasonably conservative assumptions regarding the weapons employment, as much as half the rounds fired could be expected to be greater than 200 meters from the aimpoint. Below is the basis for my disagreeing with the court's conclusion.

- a. **Measures of Dispersion of Data.** First I would like to describe two terms commonly used to describe the probabilistic distribution of data. Statisticians have devised measures of "width" of Gaussian curves by specifying a range of values of  $x$  which include a specified fraction of the measurements. The Gaussian curves are used to describe a normal distribution which is representative of the fall of shot about an artillery aimpoint. Two terms important to this matter are listed here:

- i. **Standard Deviation ( $\sigma$ ):**



About 68% of values drawn from a normal distribution are within one standard deviation  $\sigma$  [Sigma] away from the mean  $\mu$  [for the purpose of these discussions, the aimpoint is described as the mean  $\mu$ ]; about 95% of the values lie within two standard deviations; and about 99.7% are within three standard deviations. 6 Sigma contains virtually all of the normal population: 99.999998027%.

<b>Sigma Value</b>	<b>% Population within Range</b>
1	68.2689492137
2	95.4499736104
3	99.7300203937
4	99.9936657516
5	99.9999426697
6	99.999998027

ii. **Probable Error (P.E.) (Definition)** A range within one probable error on either side of the mean will include 50% of the data values. This is  $0.6745\sigma$ . In statistics, the probable error of a quantity is a value describing the probability distribution of that quantity. It defines the half-range of an interval about a central point for the distribution, such that half of the values from the distribution will lie within the interval and half outside. The term Probable Error is commonly used by artillerymen to describe the fall of shot about an aimpoint. This describes the probable error  $\gamma$  as being fixed a multiple of the standard deviation,  $\sigma$ , where the multiplying factor derives from the normal distribution. Specifically,  $\gamma = 0.6745 \times \sigma$ . For the distribution of artillery or rockets about their aimpoint, the pattern is typically elliptical and the probable errors will be described in both range, parallel to the gun-target line, and deflection, perpendicular to the gun-target line. This pattern of the fall of shot that contains 50% of the rounds is referred to as the Circular Error Probable. Three CEP will contain 95% of the distribution, from the table above 3 CEP is approximately equal to 2 Standard Deviations ( $2\sigma$ ).

b. **Weapons Used.**

- i. The 122mm 40-tube multiple launch rocket system, the BM21, with a firing range of up to 20 KM, was introduced into operational service with the Russian Army in 1963. It is widely used throughout the world. Because of its high volume of fire and large area coverage, it is well suited for use against troops in the open or for use in artillery preparations. Because these weapons have a large circular area probable (CEP), they are not suited for attacks against point targets. My estimate for these firing conditions is a CEP of 1.5% of  $R_{\max} = 300$  meters. 2 standard deviations contain 95% of the rounds and 2 standard deviations under these conditions  $\cong 3$  CEP = 900 meters.
  - ii. The 130-mm field gun, M-46, was first seen in public in May 1954. It is an indirect fire weapon with high muzzle velocity that accounts for its long range (27,490 meters); it is also an antitank weapon with armor penetration capability. Accuracy is not dependent on gun characteristics alone. Factors playing a role include variations in projectile mass, muzzle velocity, the accuracy of laying the gun in azimuth and elevation, as well as the accuracy in determining the gun position and meteorological data as well as barrel wear and history. For these firing conditions a reasonable estimate of accuracy, CEP, for this weapon is 0.6% of Range. At 27.5 KM max range, for these firing conditions, CEP = 165 meters; 3 CEP = 95% of all rounds = 495 meters.
- c. **Dispersion of Rounds Fired.** More than 50% of the rockets can be expected to fall more than 300 meters from the aim point and more than 50% of the artillery can be expected to fall more than 165 meters from the aim point and that assumes everything else is perfect. 95% of the rockets fired can be expected to fall within 900 meters of the aimpoint and the 95% of the artillery projectiles would be within 495 meters of the aimpoint. Since the fires were unregis-

tered with no correction for non standard conditions or for specific meteorological conditions, as described in the report by General Scales, these are very conservative estimates of dispersion. A conclusion by the court that anything beyond 200 meters would have been intentionally aimed at population is not supported by the science of artillery and the characteristics of these weapons being fired. It is not an accurate statement and does not reflect reality.

3. **Conclusion.** The 200 meter finding by the court is totally inconsistent with the science and practice of artillery and rocket fire. It is neither consistent with established practices for the employment of indirect fire weapons, nor consistent with any rigorous, honest, realistic assessment. Nor does a 200 meter standard reflect the science of indirect fire weapons or the established practice by artillerists around the world for predicting the probable impact of indirect fired weapons. It is not a valid conclusion. From a very careful review of Major General Scales report, and from the reported location of the artillery and rockets fired, there is nothing that would lead me to conclude that these firings were not within accepted norms for dispersion and accuracy given the methods and weapons used. Nor is there anything that would lead me to conclude there was any negligence on the part of commanders directing or executing the use of indirect fires in Knin during this two day period. Moreover, should the standard of review adopted by the Trial Chamber be allowed to stand as a legitimate interpretation of international law, it would unfairly condemn commanders who have properly conducted military operations pursuant to accepted technical and tactical standards. War is inherently dangerous and an abhorrent matter, but it is an acceptable use of force when executed pursuant to morally responsible standards and established technical and tactical norms. In the name of justice, I respectfully submit that this court cannot allow this fallacious finding by the Trial Chamber to stand, as doing so would place at risk many future commanders who are executing their responsibilities in a professionally competent and morally responsible manner to the threat of being brought before some international tribunal and unfairly charged with war crimes, as was General Gotovina here.



Wilson A. Shoffner

Lieutenant General, US Army (Retired)

Colleyville, Texas 76034

20 October 2011



26 October 2011

SUBJECT: Croatian Army use of Artillery and Rockets, Knin Croatia, 4-5 August 1995

1. I am a retired U.S. Army General who spent 37 years on active duty as a combat arms officer. My final post was Vice Chief of Staff of the U.S. Army, prior to which I served as the Army's Inspector General. My basic branch was armor, and I served in combat operations with both armor and infantry in Southeast Asia (Vietnam) and Iraq. In 1991, I commanded the 1<sup>st</sup> Armored Division in Operation Desert Storm. My training and education within the U.S. Military prepared me in the use of fire support in both tactical and operational context. I employed fires extensively as a combat leader in both Vietnam and in the first U.S. war in the Persian Gulf region in 1991. As a mid-grade officer, and later as a senior combat leader, I had extensive training and experience in the use of fires in support of maneuver force operations and gained a deep appreciation for the critical importance of effective fire support to success on the battlefield. The Army's Air-Land Battle doctrine that drove our thinking, training, and war plans development during the latter years of the Cold War relied heavily on the use of joint fires, both deep in the enemy's rear areas, and for close support along the forward edge of the battle area. My generation of officers / leaders were drilled continuously in the Army's class rooms, in field training events, and in war games and evaluated exercises in the employment of fires to support ground maneuver operations.

2. I have carefully reviewed the report, subject as above, by Major General (Ret) Bob Scales and agree completely with his observations and conclusions regarding the employment of artillery fires by Croatian forces in the battle at Knin on 4 and 5 August 1995 during "Operation Storm." Like Major General Scales, I limit my analysis here to the artillery bombardment of Knin, and I can make no judgment concerning the possibility of war crimes unrelated to the alleged unlawful attack on Knin having been committed by either side during the armed conflict in Croatia. Nor is there sufficient information available for me to voice judgment concerning the importance of Knin and the forces positioned there as a military objective. However, assuming that an attack against SVK forces and facilities in Knin was tactically important and was a specified or implied mission for the commander, General Ante Gotovina, the volume of artillery fire (900 hundred 130mm and 122mm rounds) delivered over the two-day battle against six military targets of a nature such as those attacked in Knin, was not excessive. Nor does it appear from what is described in the report that the pattern of indirect fire employment supports a conclusion that the use of these fires was intended to kill or wound civilians, or that the fires were employed in an inherently indiscriminate manner.

3. I have been advised that the evidence at trial did not establish conclusively that the artillery attack against targets in Knin caused a single civilian death or injury, nor did any evidence prove that civilians who fled the city did so as the result of being terrorized by

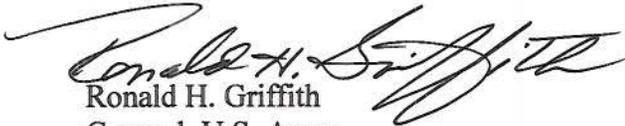
the shelling. Assuming this to be true, the absence of a single casualty strongly reinforces the other reasons why, and the conclusion that, General Gotovina's use of indirect fires was done in a responsible manner and was in no way unlawful by any reasonable standard. The fact that of the 900 projectiles fired, only 50 landed beyond 200 meters from the 10-digit grid coordinates of the "legitimate military targets" strongly suggests that artillery fires were effectively planned and executed, and within both U.S. and Russian standards for accuracy. This in itself is somewhat surprising in that the ammunition fired by Croatian artillery units was most likely old, fire direction systems were not modern, and gun crews and fire direction center personnel were almost certainly not trained to a level of competence of their U.S. or Russian counterparts.

4. Combat employment of artillery, even with the most modern systems and by highly trained personnel, entails risks. I am aware of numerous situations where U.S. units were unintentionally exposed to "friendly artillery fire." I had such an unfortunate experience with one of my battalions during Operation Desert Storm. In Vietnam such events were not uncommon due in part to the difficulties of precise identification of unit locations in the jungle and mountainous terrain where much of the fighting occurred. And, on occasion, human error resulted in mistakes made by individuals calling for fires, in fire direction centers, or by artillery and mortar gun crews. Unfortunately, a significant number U.S. Soldiers died in Vietnam due to fires that were intended to hit Viet Cong or North Vietnamese forces.

5. I do not share these observations lightly. They are not based on speculation, or from an academic perspective; they are from 37 years of experience and lessons learned while serving in the U.S. Army and multiple tours in combat. These observations, if you will, are of an experienced maneuver force leader who has employed artillery extensively in support of infantry and armored units. Like General Gotovina, I am not trained in the complex details of artillery systems, fire direction center operations, and artillery munitions, etc. However, I have known Major General Scales for decades. I and countless others view him as one of the most highly respected artillery leaders of the era in which we both served our Nation in Army service. Accordingly, I consider General Scales' technical assessment execution variables, and his conclusion that the failure to consider these variables invalidates the conclusions reached by the Trial Chamber, to be absolutely credible. It should therefore come as no surprise that I am in total agreement with his ultimate conclusion that characterizing the HV attack on Knin as unlawful based on the evidence presented at General Gotovina's trial is illogical, unjustified, and inconsistent with operational reality.

6. To reiterate, I have reviewed Major General Scale's report in detail and, and as stated above in paragraph 2, I agree fully with his observations and findings. The death of any innocent civilian in a combat operation is tragic. Military leaders are morally compelled to take every prudent action to protect non-combatants in their zones and / or areas of operations. From Major General Scales report, I can see no evidence that General Gotovina violated his responsibility to meet this obligation in his employment of artillery fires during the battle at Knin. I also believe that should the standard of review adopted by the Trial Chamber gain traction as a controlling interpretation of international law, it

will ultimately expose commanders who have conducted military operations in compliance with accepted doctrinal principles and in a morally responsible manner to the threat of being brought before some international court and charged, as was General Gotovina, with war crimes.



Ronald H. Griffith  
General, U.S. Army  
Retired