

NUCLEAR, BIOLOGICAL, AND CHEMICAL
DEFENSE
AND TECHNOLOGY
1965 BROADWAY, NEW YORK, NY 10023-5965 212-496-6100

STAT

Dear Reader,

We think that you are a very special kind of person, a reader who is concerned and involved in the critical area of nuclear, biological, and chemical (NBC) arms and defense. **We would like to provide you access to the first professional magazine to provide comprehensive information on NBC military and defense affairs — information that is of critical importance to the military leader and defense-industry professional.**

No currently available magazine provides coverage of NBC defense. Yet, the issues are of such circumstance, the information so critical, and the need to inform and maintain the flow of information is too important. NBC DEFENSE AND TECHNOLOGY INTERNATIONAL fills this gap. The professional reader now can get the information he needs to formulate a coherent vision and operate within this vital defense area.

For the defense community, NBC DEFENSE AND TECHNOLOGY INTERNATIONAL is a guide to developing military systems capable of meeting the challenge and requirements of the integrated, NBC combat environment — a guide to equipment that will allow armies to fight and win on the realistic battlefields of today and tomorrow.

Each month, NBC DEFENSE AND TECHNOLOGY INTERNATIONAL provides information from throughout the world on new government programs, contracts, sources-sought, and acquisition plans. NBC DEFENSE AND TECHNOLOGY INTERNATIONAL provides details on what military forces require and what they are seeking, the technical means of meeting those needs, and the nature of the intense NBC threat facing all nations and armies...an indispensable tool for members of the defense community.

NBC DEFENSE AND TECHNOLOGY INTERNATIONAL is one of the most exciting and graphically pleasing military magazines ever produced. We have assembled not only solid defense information in an area of critical importance, but we provide the pictorial vision of armies and equipment prepared for NBC combat.

If you were to name some of the most devious and important issues of our time, you would certainly include:

NUCLEAR ARMS

- The deployment of Soviet SS-20 and SS-21 missiles and U.S. cruise and Pershing II missiles in Europe;
- The impact on the nuclear balance of a new generation of strategic weapons such as MX, Trident, Midgetman, the B-1 bomber, the advanced technology (stealth) bomber, and new Soviet, French, and British nuclear arms;

CHEMICAL WARFARE

- Production of binary nerve weapons, the massive Soviet chemical warfare threat, and chemical warfare in Laos, Afghanistan, Iran and Kampuchea.

BIOLOGICAL WEAPONS

- Gene engineering's impact on the future production of new, super-lethal biological warfare agents;

TERRORIST THREAT

- Terrorism and the threat of weapons of mass destruction in the hands of hostile and potentially unstable governments and organizations;

NBC DEFENSE AND TECHNOLOGY INTERNATIONAL provides access to an entire spectrum of information, from broad assessments, to specific equipment and markets, to the latest scientific and technical breakthroughs, to the world-wide debate concerning mass weapons.

- Our articles review scientific, doctrinal and policy issues and provide in-depth coverage and analysis...
- Our features and columns cover programs, equipment, supporting industries, and new technologies, together with news and events...
- Our reports provide detailed, peer-reviewed, scientific and technical information...
- And each month we summarize and analyze the world's published literature on NBC arms, warfare and defense.

NBC DEFENSE AND TECHNOLOGY INTERNATIONAL covers the entire range of nuclear arms and defense issues...

- the strategic defense initiative (SDI) and ballistic missile defense programs
 - strategic and theatre nuclear forces and programs
 - nuclear arms policy, arms control, and proliferation
 - civil defense planning and programs
 - the long- and the short-term environmental effects of nuclear war
- ...the full range of **chemical arms and defense issues...**

- defining the chemical threat and its impact on future war
- in-depth reports on chemical arms use throughout the world
- chemical protective technologies and development programs
- chemically hardened armed forces and equipment...survivable armies
- national programs for chemical defense, new contracts and activities
- reports on chemical defense research and industrial programs

...and the full range of **biological arms and defense issues...**

- gene engineered biological war agents and the evolving biological threat
- the potential uses of biological weapons in war, sabotage, and terrorism
- biological defense research, equipment, technologies, and programs

NBC DEFENSE AND TECHNOLOGY INTERNATIONAL is prepared and edited by experienced professionals from within the NBC defense industry — people who are working the problems. Their assignment is to provide an insider's view into the people and technologies surrounding nuclear, biological, and chemical arms and to provide our readers new eyes and ears to peer into this pivotal field.

Assisting our editors is **NBC DEFENSE AND TECHNOLOGY INTERNATIONAL'S** editorial board, comprised of leading technical and policy authorities in nuclear, and chemical biological matters from throughout NATO.

In addition to one year's 10 regular monthly issues featuring authoritative coverage of the world's nuclear, biological and chemical arms and defense activities, you will receive our annual **Yearbook and Buyer's Guide**, the most comprehensive review available on the international nuclear, biological and chemical military balance, combined with **information on the NBC defense equipment available from sources throughout the world.**

You will also gain access to a **NEW BOOK SERIES** including texts on:

- the effects of nuclear arms and nuclear war
- a new compendium on toxins in warfare
- chemical and biological warfare and technology
- command, control, communications and intelligence systems survivability on the NBC integrated battlefield

...and all books will be available to our subscribers at a 20% discount.

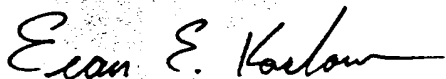
Our subscribers can look to NBC DEFENSE AND TECHNOLOGY INTERNATIONAL as the definitive source of information on NBC arms, warfare, and defense.

Few magazines have ever offered such invaluable information, and none on a topic so important to the interests of all freedom-loving people. So if you are a military leader, analyst, planner, industrialist, or technical person or simply have a need to be kept informed about the most important issues of our time, you need **NBC DEFENSE AND TECHNOLOGY INTERNATIONAL.**

If you are a military or government official, your access to NBC DEFENSE AND TECHNOLOGY INTERNATIONAL is FREE when you fill out our qualification form and provide a copy of your business calling card or official office stationery.

If you are a leader in industry, work at an academic institution, involved in private RDT&E, or simply interested in NBC defense affairs, NBC DEFENSE AND TECHNOLOGY INTERNATIONAL provides the information you need to guide your activities, analyze policy, and identify opportunities. A subscription normally costs \$65, but for our charter subscribers we are offering a SPECIAL 30% discount...ten monthly issues plus our special Yearbook and Buyer's Guide FOR ONLY \$45.

Sincerely,



Evan E. Koslow, PhD.
Associate Publisher

P.S. I have attached a second qualification form to this letter. If you know a colleague who needs our magazine, please forward my letter so that they may have the opportunity to be informed about nuclear, biological, and chemical defense activities worldwide. Thank you.

**A NEW JOURNAL DEVOTED TO THE FIELD OF
NUCLEAR, BIOLOGICAL, AND CHEMICAL
DEFENSE
AND TECHNOLOGY**

CALL FOR PAPERS

Nuclear, Biological, Chemical (NBC) Defense & Technology is a new magazine devoted to the scientific, technical, and policy issues of nuclear, biological and chemical defense. NBC Defense & Technology is international in scope and will cover world-wide activities in the NBC defense area. NBC Defense & Technology will publish articles and report on military and industrial programs in the areas of: strategic defense, ballistic missile defense (BMD), civil defense, the effects of nuclear war on the environment, and chemical and biological defense. NBC Defense & Technology is a forum for scholarly reviews of national nuclear, biological and chemical defense policy and doctrine.

NBC Defense & Technology will also publish scientific and technical papers relating to nuclear, biological and chemical defense. Papers will examine, for example: the adsorption and destruction of toxic chemical materials; the interception and destruction of biological organisms and toxins; the physical effects of the electromagnetic, thermal, and blast forces produced by nuclear bursts; long-term and environmental effects of nuclear war; detection of toxic materials, pathogens, and nuclear radiation; materials technology relevant to NBC defense; reports on means for protecting structures and human beings from the effects of NBC agents/effects; and reports germane to the field of NBC defense, generally.

Technical and scientific reports/papers submitted to NBC Defense & Technology will be peer reviewed. Articles, reviews, and features will be reviewed by the technical editors of NBC Defense & Technology.



If interested in submitting editorial material for publication in NBC Defense & Technology, please write for a copy of "Guide to Authors". Inquire to: Editor, NBC Defense & Technology, 1965 Broadway, New York, N.Y. 10023.

INTRODUCTION TO NBC DEFENSE & TECHNOLOGY, INTERNATIONAL

Nuclear, Biological, Chemical Defense & Technology, International
(NBCDI) is a new magazine devoted to the interests of the professional nuclear and NBC defense communities and all persons having a serious interest in nuclear, biological and chemical defense matters. The magazine provides an international forum for the civil and military defense and industrial communities in the NBC defense arena that is balanced in content, professional and independent, and reports without prejudice or bias the latest technical and scientific information available in this critically important field.

In addition to nuclear, biological and chemical (NBC) defense policy and doctrine, the magazine's coverage extends to ballistic missile defense (BMD) and the Strategic Defense Initiative (SDI), nuclear forces and strategic- and theatre-level nuclear defense requirements and programs, technical aspects of chemical and biological warfare and defense, coverage of industrial developments relating to these areas, and technical and scientific papers of interest to the nuclear and NBC defense professional.

NBCDI is composed of three sections, each designed to provide an appropriate format for discussions varying from the general to the specific. The first of these sections is composed of scholarly papers devoted to broad policy and technical issues. This portion of the magazine is similar to *Foreign Affairs* but is strongly supported with photography and graphics. In this portion of the magazine, comprehensive and scholarly papers on nuclear and NBC matters, written by leading experts within the military, government, and industry serve to bring the reader the broad and expansive thinking of leaders within the NBC defense field.

In the second section of the magazine, columns and features are provided stressing new technologies, RDT&E programs, requirements, industry activities, and news. This portion of the magazine is similar in design and format to *International Defense Review* and informs and communicates information relating to programs and activities throughout the international nuclear and NBC communities.

The third section of the magazine is composed of peer-reviewed technical and scientific papers of interest to persons within the NBC defense field. These papers include studies on the long-term effects of nuclear war, chemical toxicity, antidotes and medical treatment for poisoning and radiation exposure, filtration and adsorption phenomena, aerosol research, materials compatibility, EMP and SGEMP effects, etc. This portion of the magazine is similar in design and format to scientific reports published in *Nature*, *Science*, or similar professional journals.

The editors of NBCDI are recognized scientists and military persons with experience in the nuclear and NBC defense fields. For example, the Senior Editor for European NBC Defense is Derek Griffiths, former Superintendent of the U.K. Ministry of Defense, Chemical Research Establishment, Porton Down. The Senior Editor for Strategic Affairs is Dr. Michael Vlahos, Director of Strategic Studies, Johns Hopkins University, School for Advanced International Studies. The Executive Editors for International NBC are Colonel Richard M. Price and Dr. Barbara B. Saunders, internationally recognized experts on chemical defense systems and technology. The Senior Editor for Strategic Defense is Daniel Goure, chairman of the threat committee for the Strategic Defense Initiative pilot architectural study. Our Senior Contributing Editor for Toxin and Chemical Warfare is Dr. Alex Ceigler, with over 30 years experience in toxin and microbiological warfare studies. The Associate Publisher of NBCDI is Dr. Evan E. Koslow, former director of NBC defense systems development and testing at a major U.S. industrial firm specializing in filtration and protection systems.

This is only a brief sampling of our editorial staff, which includes a total of 17 editors spanning the full range of supporting disciplines and positioned throughout the world. The magazine retains contributing editors with extensive and detailed experience in specialized nuclear and NBC defense matters and who provide specialized military and technical expertise and insights into the complex and sophisticated issues and technologies underlying nuclear and NBC defense. In addition, a Senior Editorial Advisory Board is being formed to assist in editorial planning and to assure the magazine's international and balanced coverage. The members of this senior board consist of high-level military and scientific leaders. Members of the Senior Editorial Advisory Board will be announced in February 1986.

NBCDI is the first magazine/journal to provide comprehensive coverage of these controversial and critically important defense areas and provides this coverage from an international viewpoint. NBCDI will be distributed strictly by name through both controlled and paid subscriptions. The magazine is provided without charge to qualified military and government officials. Paid subscriptions are available to qualified readers from industry, military analysts, libraries, and other professionals. The magazine is a serious vehicle and forum for the NBC defense professional and world leaders concerned with the impact of NBC warfare and defense.

NBCDI is sponsored by OMNI Publications International, Ltd., the publishers of OMNI magazine. The support and substantial resources available from OMNI ensure the long-term strength of NBCDI.

The first issue of NBCDI will appear in April 1986 and the magazine will be published monthly 10 times each year (no issues in July and August), together with an annual Nuclear and NBC Defense Yearbook and Buyer's Guide issued in August and containing a summary of international nuclear and NBC defense programs and products.

For Further Information, contact:

Dr. Evan E. Koslow
Associate Publisher
NBC Defense & Technology, International
1965 Broadway
New York, N.Y. 10023
U.S.A.
(212) 496-6100 ext. 728

ALL QUESTIONS MUST BE ANSWERED TO RECEIVE NBC DEFENSE AND TECHNOLOGY INTERNATIONAL (Please Print)
I WISH TO RECEIVE NBC DEFENSE INTERNATIONAL [] YES [] NO IS THIS A RENEWAL? [] YES [] NO

Title _____ First Name _____ Last Name _____ Date of Birth _____

ORGANIZATION INFORMATION

Company, Organization, or Agency _____ Division or Department _____
Address _____ Zip Code _____ Country _____ Mail Stop _____
Job Title _____ Professional Telephone Number _____

ORGANIZATION CLASSIFICATION

YOUR ORGANIZATION: Which one heading best describes your organization?

QUALIFIED FOR FREE SUBSCRIPTION

- (BUSINESS CARD OR COPY OF OFFICE STATIONARY MUST BE ATTACHED FOR FREE SUBSCRIPTION)
[] Military
[] Government Agency
[] Government Elected Office

PAID SUBSCRIPTION *

- [] Industry
[] Educator
[] Engineering, Analytical, Testing Services, Independent Laboratory

- [] Non-Profit Organization
[] Library
[] Private Individual
[] Student
[] Other (please specify)

YOUR TITLE: Choose the heading that best describes your primary job title.

- [] Military Officer: RANK _____
[] Chief Engineer or Scientist
[] Project/Program Engineer or Manager
[] Design, Analytical, System or Aerospace Engineer
[] Production, Manufacturing, or Quality-Control Engineer
[] Technical Manager/Director, Group Leader, Lead Engineer
[] Member Technical Staff or Other Engineering
[] Legislator, Member of Parliament, Congress or Equivalent
[] Legislative Staff Member
[] Diplomatic Officer
[] Industrial Distribution
[] Purchasing or Acquisition
[] Company Officer, Technical
[] Company Officer, Non-Technical
[] Educator
[] Student
[] Retired
[] Other (Please Specify) _____

HOME INFORMATION

Number and Street _____ City _____
State _____ Zip Code _____ Country _____

WHERE WOULD YOU LIKE TO RECEIVE NBC DEFENSE INTERNATIONAL? [] ORGANIZATION [] HOME

SIGNATURE _____ DATE _____

PLEASE COMPLETE THIS SUBSCRIPTION FORM TO RECEIVE NBC DEFENSE AND TECHNOLOGY

ALL QUESTIONS MUST BE ANSWERED TO RECEIVE NBC DEFENSE AND TECHNOLOGY INTERNATIONAL (Please Print)
I WISH TO RECEIVE NBC DEFENSE INTERNATIONAL [] YES [] NO IS THIS A RENEWAL? [] YES [] NO

Title _____ First Name _____ Last Name _____ Date of Birth _____

ORGANIZATION INFORMATION

Company, Organization, or Agency _____ Division or Department _____
Address _____ Zip Code _____ Country _____ Mail Stop _____
Job Title _____ Professional Telephone Number _____

ORGANIZATION CLASSIFICATION

YOUR ORGANIZATION: Which one heading best describes your organization?

QUALIFIED FOR FREE SUBSCRIPTION

- (BUSINESS CARD OR COPY OF OFFICE STATIONARY MUST BE ATTACHED FOR FREE SUBSCRIPTION)
[] Military
[] Government Agency
[] Government Elected Office

PAID SUBSCRIPTION *

- [] Industry
[] Educator
[] Engineering, Analytical, Testing Services, Independent Laboratory

- [] Non-Profit Organization
[] Library
[] Private Individual
[] Student
[] Other (please specify)

YOUR TITLE: Choose the heading that best describes your primary job title.

- [] Military Officer: RANK _____
[] Chief Engineer or Scientist
[] Project/Program Engineer or Manager
[] Design, Analytical, System or Aerospace Engineer
[] Production, Manufacturing, or Quality-Control Engineer
[] Technical Manager/Director, Group Leader, Lead Engineer
[] Member Technical Staff or Other Engineering
[] Legislator, Member of Parliament, Congress or Equivalent
[] Legislative Staff Member
[] Diplomatic Officer
[] Industrial Distribution
[] Purchasing or Acquisition
[] Company Officer, Technical
[] Company Officer, Non-Technical
[] Educator
[] Student
[] Retired
[] Other (Please Specify) _____

HOME INFORMATION

Number and Street _____ City _____
State _____ Zip Code _____ Country _____

WHERE WOULD YOU LIKE TO RECEIVE NBC DEFENSE INTERNATIONAL? [] ORGANIZATION [] HOME

SIGNATURE _____ DATE _____

PLEASE FORWARD THIS SUBSCRIPTION FORM AND THE ATTACHED LETTER TO A COLLEAGUE.

INTRODUCTORY OFFER: INTERNATIONAL SUBSCRIPTION RATES

Make Checks and money orders payable to: NBC Defense International, Ltd.

Table with columns for country, currency, and rate. Includes countries like Algeria, Australia, Austria, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Botswana, Brazil, Brunei, Canada, Cayman, etc.

DEFENSE AND TECHNOLOGY

INTERNATIONAL APRIL 1986



SDI'S SOFT
UNDERBELLY

NBC SURVIVABILITY

INTEGRATING
HIS PROTECTION

NUCLEAR, BIOLOGICAL, AND CHEMICAL DEFENSE AND TECHNOLOGY INTERNATIONAL APRIL 1986

FFDA DFDEKDFJ

THE HISTORY OF THE CITY OF NEW YORK, IN ITS EARLY PERIODS, ABOUNDS IN EPISODES OF DEEP INTEREST, ILLUSTRATING THE DEVELOPMENT OF A PETTY FUR-TRADING

CONTENTS

ARTICLES

THE CHEMICAL WAR IN IRAN	A personal diary and report UN Chemical Warfare Investigation to Iran - Dr. Peter Dunn	00
THE EXPANDING CLUB	Sweden developed and tested a nuclear weapon nearly a decade ago. How many other technologically advanced countries have taken the nuclear option?	00
NUCLEAR NAVIES REVIEW	U.S., U.S.S.R., French, and British nuclear navies differ in structure and function, and they may not be the only nuclear-armed navies afloat	00
SDI'S SOFT UNDERBELLY: STRATEGIC AIR DEFENSE	The Strategic Defense Initiative (SDI) concentrates on the ballistic missile threat, but the cruise missile and bomber threats are expanding. Is there a need for a balanced space/atmospheric SDI?	00

COLUMNS

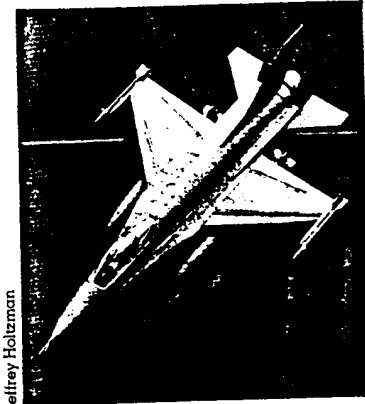
NBC DEFENSE: HORIZON		00
NBC DEFENSE: INDUSTRY BRIEFS	Bendix ICAD Moves Forward	00
	New Antidotes and Prophylaxis	00
	Advanced NBC Defense Control System Demonstrated	00
	British U.S. 10 Respirator Debuts	00

FEATURES

SATORY X	French NBC Equipment on Display	00
AIR BASE DEFENSE	Rhein Mein AB provides 100 percent protection and trains to fight an NBC war	00
NBC PROTECTIVE CLOTHING	New textile and sorbent technologies are providing better protection with less physiological load - better soldiering in hostile environments	00
ARMORED FIGHTING VEHICLE SURVIVABILITY	NBC protection for fighting vehicles relies on adsorbent and filtration technologies	00

REPORTS

	Improved Textile and Filtration Materials from Carbon and Fibrillated Acrylic Fiber Mixtures	00
	Hydrophobicity Testing of Face Mask Canister HEPA Filters	00



Jeffrey Holtzman

The history of the city of New York, in its early periods, abounds in episodes of deep interest, illustrating the development of a petty fur-trading post into the great cosmopolitan metropolis of the Western Hemisphere. Many ponds have been devoted to this worthy theme, with a wealth of illustration and much grace. Literary tales, and other tales, of the wonderful story have been told. In this brief chapter an attempt is made to exhibit a few vignettes from the early three centuries of annals pertaining to the Empire City, and to give a few intimations of her lines of development and her wealth of endeavor. The first recorded visitor to this jocund region was Verazano, a Florentine navigator and trader, who was serving at that time as a French corsair. He sailed from Brittany in 1524, and cruised up the American coast from Cape Fear to New York Bay, where his ship lay at anchor for a few days, sending boats up the river and finally, and finally, reaching the natives. There is a tradition that Dutch ships entered the North River in 1614, and founded there the first settlement from the natives which they had constructed on the shore. But the first practical and profitable settlement was the building in a fort which they had constructed on the shore. But the first practical and profitable settlement was the building in a fort which they had constructed on the shore. But the first practical and profitable settlement was the building in a fort which they had constructed on the shore.

The history of the city of New York, in its early periods, abounds in episodes of deep interest, illustrating the development of a petty fur-trading post into the great cosmopolitan metropolis of the Western Hemisphere. Many ponds have been devoted to this worthy theme, with a wealth of illustration and much grace. Literary tales, and other tales, of the wonderful story have been told. In this brief chapter an attempt is made to exhibit a few vignettes from the early three centuries of annals pertaining to the Empire City, and to give a few intimations of her lines of development and her wealth of endeavor. The first recorded visitor to this jocund region was Verazano, a Florentine navigator and trader, who was serving at that time as a French corsair. He sailed from Brittany in 1524, and cruised up the American coast from Cape Fear to New York Bay, where his ship lay at anchor for a few days, sending boats up the river and finally, and finally, reaching the natives. There is a tradition that Dutch ships entered the North River in 1614, and founded there the first settlement from the natives which they had constructed on the shore. But the first practical and profitable settlement was the building in a fort which they had constructed on the shore. But the first practical and profitable settlement was the building in a fort which they had constructed on the shore.

FIRST WORD: WHY NBC DEFENSE AND TECHNOLOGY?

Proliferation, rearmament and actual use have made NBC warfare a major concern to all military forces

Why has information on nuclear, biological, and chemical (NBC) arms and defense become of critical importance to the world's defense establishment? Why is a magazine devoted to this specific element of the defense world absolutely essential? The answer lies in the fact that NBC defense is becoming the critical concern of every military force in the world.

NBC Defense and Technology is the insider's magazine on nuclear, biological, and chemical defense matters. The information and coverage is unique, and the world's defense community knows that it needs NBC defense...and we provide it.

NBC Defense and Technology is a new magazine devoted to providing detailed and comprehensive information on nuclear, biological, and chemical arms and defense. No other magazine covers this critical defense area and provides information of such direct value to military, industrial, and political leaders.

The defense industry must provide equipment that can fight and survive in the NBC battlefield...in any theater of operation and with any national combatant. The requirement for NBC protection will be applied to all future combat equipment, and the NBC defense industry plays a major role in providing effective military equipment. The markets for NBC defense systems are expanding rapidly. NBC Defense and Technology reaches those military customers and keeps them informed about the threat, the requirements, and the means to meet those requirements. It guides political leaders through the maze of technology and polemics by providing clear reviews and analysis of major issues.

Because NBC defense is of importance to leaders within the defense community, it is read by the people that the defense industry wants to meet. NBC Defense and Technology attracts the audience with a real interest in defense, and our editorial material covers a field of such importance

intensely, carefully, and completely. Advertisers will go home at night with our audience. Our magazine will circulate amongst defense professionals, the offices of parliament, congress, and government agencies, and throughout the halls of the defense industry.

There is no alternative. NBC Defense and Technology is the only magazine devoted entirely to NBC defense and armaments, and the information and data we provide cannot be found anywhere else in the open literature.

What is the NBC defense picture?

It is estimated that 16 nations possess significant chemical weapons and chemical warfighting capabilities and that perhaps eight additional nations have at least some limited chemical offensive warfighting capability. In total, perhaps 24 nations possess chemical weapons. The use of chemical weapons has accelerated substantially in the past ten years, with five chemical wars in the past decade compared with perhaps three chemical wars during the earlier 60 years. In addition, new chemical arms ranging from toxins to nerve gas have been introduced to the battlefield.

Nuclear arms proliferation has long been a major source of concern, and the number of nations engaged in nuclear arms research and development has expanded substantially in the past decade. In our premiere issue, we investigate the nuclear arms development effort sponsored in Sweden during the late 1960s and 1970s. Sweden successfully developed and tested a nuclear device as part of this program. Several other nations have apparently conducted similar programs and retain a "nuclear option" in time of war.

The development of technologies such as laser isotope enrichment, the proliferation of nuclear materials, and the general availability of the detailed information required for the production of nuclear devices has reduced the barriers to acquiring

remain an attractive and increasingly cost-effective deterrent, and this economic and military reality is effectively undermining efforts to deter proliferation.

The superpowers continue to modernize their strategic and theatre-level nuclear systems. The NATO nations have embarked on major new nuclear weapon deployments that will remain in service into the next century. Ballistic missile defense has once again become a major component of the strategic equation with the introduction of President Reagan's Strategic Defense Initiative. The non-aligned nations of Sweden and Switzerland have taken an alternative approach by providing comprehensive NBC protection to their populations.

Biological warfare agents have previously been confined to naturally occurring and well-characterized disease agents and a group of lesser-known tropical fevers. However, with the advent of gene and engineering technology, the potential for more complex, unique, highly toxic, and previously unknown agents has become a major cause for concern. Not only is the spectrum of potentially lethal biological organisms and their possible modes of action expanded, but vaccine technology and supplies may be made obsolete. Biological warfare was only recently considered to lack a credible military role, save risky sabotage and terrorist operations, but they might once again be adapted to new military missions.

Smaller nations, often surrounded or adjacent to hostile neighbors, are now seeking nuclear, biological, or chemical weapons to serve a regional deterrence role. As economic, technological, and diplomatic barriers decrease in effectiveness, these weapons proliferate and are now held by a broad range of Third World nations as well as the NATO and Soviet/Warsaw Pact nations. The threat of NBC conflict has therefore expanded from the European theatre to include essentially any theatre of operations.

WHO'S WHO

NBC Defense and Technology is edited and operated by people with direct experience in nuclear and NBC defense systems. These people are insiders writing about persons and events that they have known and experienced.



DR. EVAN E. KOSLOW
ASSOCIATE PUBLISHER

Dr. Koslow is President of KT Corporation, a diversified technology and consulting company, and holds a B.A. and M.F.S. from Yale University and a Ph.D. from Cornell University. Over the past ten years, Dr. Koslow has been involved in both the nuclear weapon and NBC defense areas. He has provided lectures at Johns Hopkins School for Advanced International Studies, the U.S. Naval Operations Intelligence Center, the Armed Forces Communications and Electronics Association, and numerous public forums on topics including nuclear weapons effects, nuclear war, nuclear arms proliferation, and NBC defense technology.

Dr. Koslow was the Senior Research Scientist in charge of NBC defense equipment and systems development and testing at Pall Corporation, a major U.S. manufacturer of NBC defense filters, textiles, and devices. He has written numerous papers on the testing and development of NBC defense equipment, on nuclear contamination and radiation effects, monitoring low-level radiation, and radiation detection and imaging instruments. Dr. Koslow was involved in the development and testing of numerous NBC defense devices including face mask canisters, collective protection filters, particulate filtration media, water filters, and centrifugal prefilters, as well as the development of testing and evaluation methods for these systems.



DR. BARBARA SAUNDERS
EXECUTIVE EDITOR

Dr. Saunders is President of Applied Science and Analysis, Inc. and chief of NBC Defense International's New Orleans office. She holds a Ph.D. in Physical Chemistry from Harvard University and has over 15 years of experience in the areas of nuclear fuel reprocessing, radiation chemistry, and NBC defense programs and analysis.

Dr. Saunders has had primary responsibility for programs in NBC defense including detection and alarms, decontamination, contamination avoidance, individual and collective protection, chemical and materials interaction, and chemical properties of agents. Her work has included detailed planning of chemical defense experiments for the U.S. Army and for the U.S. Air Force. She has organized and helped manage several national and international conferences on NBC defense including the Chemical and Biological Task Forces for combat vehicles, vans, and shelters and fixed and rotary wing aircraft, USAF Collective Protection Boards, and toxin technology.



DR. MICHAEL VLACHOS
SENIOR EDITOR

Dr. Vlahos is Research Professor and Director of National Security Studies at the Johns Hopkins School of Advanced International Studies. He is chief of NBC Defense International's Washington office and concentrates upon the international policy, doctrinal, and political affairs surrounding nuclear, biological, and chemical arms and defense. Dr. Vlahos received his A.B. from Yale University and his M.A. and Ph.D. from the Fletcher School of Law and Diplomacy.

From 1977-1979 he served as a strategic analyst with the Central Intelligence Agency as the primary specialist in Soviet naval doctrine. From 1979-1981 he worked on a number of projects for the Defense Nuclear Agency, OSD (AE), and Lawrence Livermore Laboratory, and on the Joint Service Small Arms Program. He was also a consultant to the Rand Corporation.

Dr. Vlahos has written extensively on military topics ranging from small arms to naval strategy, the Middle East to South America, and on military history to theatre and strategic nuclear arms policy.

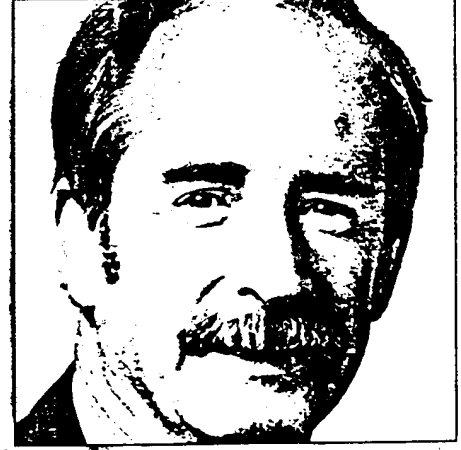
In addition to his numerous publications, Dr. Vlahos has appeared on *Good Morning America*, *Independent Network News*, the CBC, the BBC, and he is the strategic policy analyst for the Cable News Network.



DR. ALEX CIEGLER
SENIOR CONTRIBUTING EDITOR

Dr. Cieglar received his Ph.D. in Microbiology from the University of Wisconsin in 1956 and has over 30 years of experience in the areas of mycotoxins, agriparticulates, and fermentation processes. Dr. Cieglar has been responsible for the collection of information on the toxicology and chemistry of toxins and has also worked on the USAF hardened shelter program, casualty decontamination program, and other NBC defense efforts.

Dr. Cieglar will be providing detailed coverage of biological and toxin arms and defense for the readers of NBC Defense & Technology. He was originally based at Ft. Detrick Biological Warfare Center in the 1950s and later moved to the US Department of Agriculture (USDA) Northern Region Research Center in Peoria, Illinois and later joined the Southern Region Research Center in New Orleans, Louisiana. At USDA, Dr. Cieglar continued his research on mycotoxins, fermentations, and agricultural dusts. Dr. Cieglar was a Principal Scientist of the Engineering Laboratory of Computer Sciences Corporation based at the National Space Technology Laboratory where he is involved in U.S. Army and Air Force NBC defense programs.



COLONEL RICHARD PRICE
EXECUTIVE EDITOR

Colonel Price is Vice President of Applied Science and Analysis, Inc. and has over 25 years of operational, command and control, chemical warfare defense, and management experience in the highest national and international organizations and forums. Colonel Price spent several combat tours in Vietnam, has over 7,500 hours of military flying experience, he has been stationed in seven countries.

In the chemical warfare defense systems arena, Colonel Price organized and led a team which collected data from over 300 program and system management personnel from across the US on the NBC requirements of all Army vehicles, vans, and shelters. He then initiated and organized a series of multi-service conferences in chemical defense—The Chemical and Biological Task Force for Ground Systems and for Aircraft.

His varied military background includes assignments with the Spanish Joint Chiefs of Staff in Madrid; the U.S. European Command in Vaihingen, Germany; U.S. Air Forces Europe, Ramstein, Germany; The Alternate National Military Command Center near Washington; The Defense Communications Agency, Thailand; The Defense Communications Agency, Vietnam; and U.S. Delegate to the Southeast Asia Treaty Organization, Bangkok, Thailand.