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FEB 9 1989

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CENTER FOR INTERNATIONAL STUDIES
DEFENSE AND ARMS CONTROL STUDIES PROGRAM
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CAMBRIDGE, MASSACHUSETTS 02142

E38-606
Harvard University
Prof. Matthew S. Meselson
Department of Biochemistry
Cambridge, MA 02138

TELEPHONE: (617) 253-8087

February 6, 1989

Dear Prof. Meselson:


I take the liberty of concerning you with a request.

On behalf of the Center's faculty and students I would like to ask you if you might be willing to accept an invitation for holding a guest lecture on the topic "Disarmament of Chemical Weapons" in our distinguished lecture series presented by the Defense and Arms Control Studies Seminar. We would feel honored, if you could accept this invitation. As a possible date for this lecture I like to suggest March 15, 1989.

OK

The lecture series gives distinguished speakers from all over the world the opportunity to present their views on military, political, technological and historical aspects of national and international security issues. The seminar meets weekly, mostly on wednesdays, sometime in the afternoon. After each lecture, which should not extend forty-five minutes to an hour, there will be a discussion of the speaker's theses. Normally a seminar session is attended by forty participants, faculty members and interested graduate students.

We would be grateful, if you could agree to share your thoughts with us and accept this invitation. If the date mentioned does not fit into your schedule, please let me know. Perhaps, you can agree to come on a later date more convenient to you. In any case, I thank you very much for considering this request and look forward to welcoming you here. Also many thanks for your efforts on behalf the Center's faculty and students. I will give you a call within the next few days to learn about your decision.

Sincerely yours,

Heinz A.J. Kern
Program Co-ordinator,
European Security Studies Project

738-7899 (h)

MIT 4:00 PM WEDNESDAY 15 MARCH 1989
(HEINZ KERN 253-8087)

PRESIDENT BUSH: OCTOBER 21 TOLEDO: AND IF I'M ELECTED PRESIDENT, IF I'M REMEMBERED FOR ANYTHING, IT WOULD BE THIS: A COMPLETE AND TOTAL BAN ON CHEMICAL WEAPONS."

-POST-ELECTION ADDRESS TO JOINT SESSION LAST MONTH

NATO ALLIES: 7 MARCH FRG CHANCELLOR HELMUT KOHL "I THINK THERE IS A GOOD CHANCE FOR A UNIVERSAL BAN ON CHEMICAL WEAPONS...WE WILL DO EVERYTHING TO MAKE THESE WEAPONS DISAPPEAR, BECAUSE WE DO NOT NEED THEM."

SOVIET UNION: PRODUCTION AND OPPOSITION TO INTRUSIVE VERIFICATION
THE CHEMICAL INDUSTRY

CHEMICAL DISARMAMENT IS HIGH ON ARMS CONTROL AGENDAS

1. WHAT ARE CHEMICAL WEAPONS?
2. WHAT ARE THEIR MILITARY CHARACTERISTICS?
3. WHAT ARE THEIR POLICY IMPLICATIONS?

FIRST, A SHORT HISTORY

- * APRIL 1917. CA 5,000 CLINDERS CHLORINE AT YPRES
- * WEAPONS/MASKS AND OTHER DEFENCES AND TACTICS
- * PHOSGENE, MUSTARD (JUNE 1917, ONE-SIDED)
- * >100,000 TONS/ CA 500,000 CASUALTIES WESTERN FRONT: 3%
- * 1925 GENEVA PROTOCOL
- * NON-USE IN WWII. ALLIES/AXIS ASSURANCES. MILITARY DISUTILITY. FEAR OF RETALIATION AGAINST CITIES, LARGE STOCKS, NERVE AGENTS, BUT NOT ASSIMILATED.
- * OUT OF >200 WARS SINCE PROTOCOL, FEW CONFIRMED USES --
 - ITALY VS ETHIOPIA 35-36.
 - JAPAN VS CHINA 38- .
 - EGYPT VS YEMEN 63-67.
 - US VIETNAM CS.
 - IRAQ/IRAN.

IN EACH CASE NO GAS MASKS INITIALLY.

US POLICIES AND PROGRAMS

* 1960'S US HAD BW, CW AND WAS NOT PARTY TO 1925 PROTOCOL

*1969-'70 PRESIDENT NIXON
RENOUNCED BW
RENOUNCED TOXINS
PLACED CW ON HOLD
ENDORSED PROTOCOL
ENDORSED EMERGING BWC

CENTRAL ISSUES: PROLIFERATION AND UTILITY

---EXPLAIN---

*1974 PRESIDENT FORD RATIFIED PROTOCOL AND BWC

*1976 US/SOVIET CW BILATERALS START

*1977 PRESIDENT CARTER DIRECTS USG TO DEVELOP CW POSITION

*1982 BILATERALS RESUME AFTER LAPSE ORDERED BY PRESIDENT REAGAN

*1984 US DRAFT CWC TREATY PRESENTED IN GENEVA BY GEORGE BUSH
MORE DETAILED DECLARATIONS
EARLIER ON-SITE VERIFICATION OF DECLARATIONS
MANDATORY CHALLENGE INSPECTION

*1984 MAJOR IRAQI USE OF GAS

*1986 GORBACHEV--FUNDAMENTALLY NEW POLICIES FOR CWC

*1987 RESUMED US PRODUCTION

*1988 PARIS CONFERENCE 149 NATIONS 80 MINISTERS. IMPETUS TO CWC

*1989 PRESIDENT BUSH REAFFIRMS TREATY OBJECTIVE

MODERN CW: US AND SOVIET STOCKPILED AGENTS.

THE NERVE AGENTS (Germany WWII)
HUNDREDS TESTED
SARIN - SOMAN - VX
RESPIRATORY VERSUS CONTACT

MUSTARD
VAPOR HAZARD TO SKIN

MUNITIONS

US: ARTILLERY, BOMBS

SOVIET UNION: ARTILLERY, ROCKETS, BOMBS, MISSILE WARHEADS

REQUIREMENTS: SARIN COVERAGE-- UNPROTECTED
OPEN TERRAIN: 0.1 - 3 TONS PER SQUARE KILOMETER

1 TON CORRESPONDS TO ABOUT 300 155-MM. COMPETITIVE c ICMS

CHEMICAL WEAPONS ARE UNIQUE -- ANTI-CHEMICAL PROTECTION

MOPP

MASK X100,000

SUIT <FOUR POUNDS OVERBOOTS, GLOVES

MOPP 4 INVULNERABLE TO CW/BW

FOR CASUALTY PRODUCTION, CW IS NOT COMPETITIVE WITH HE, FLAME

NOT CASUALTIES BUT TEMPO

INTERFERENCE WITH MISSION PERFORMANCE WHERE TEMPO IS CRITICAL

HEAT/ACUITY/DEXTERITY/PSYCH

ANECDOTES AND MODELS VS FIELD EXERCISES TO TEST MISSION
PERFORMANCE

REFORGER

NEAR ZERO TO >30%

NEEDS OBJECTIVE REVIEW

POSSIBLE NEW DEVELOPMENTS

MASK BREAKERS

MORE TOXIC AGENTS

BRINGS US TO US POLICY

UTILITY OF US CHEMICAL WEAPONS

LIKE-FOR-LIKE DETERRENCE AND WAR FIGHTING IN EVENT OF MAJOR WAR

LIKLIHOOD

UTILITY

AVAILABILITY/ALLIANCE POLICIES

versus

UTILITY OF CWC

CHEMICAL WEAPONS CONVENTION MOST EFFECTIVE MEANS TO STOP AND REVERSE PROLIFERATION. POSSIBLY INCLUDING BIOLOGICAL WEAPONS.

THE CHEMICAL WEAPONS CONVENTION

CONFERENCE ON DISARMAMENT

HISTORY

AD HOC COMMITTEE ON CHEMICAL WEAPONS

MEMBERSHIP AND CHAIR

ROLLING TEXT (Jan 89)

16 ARTICLES

I SCOPE

II DEFINITIONS

III DECLARATIONS

IV CHEMICAL WEAPONS

V PRODUCTION FACILITIES

VI ACTIVITIES NOT PROHIBITED

VII NATIONAL IMPLEMENTATION

VIII THE ORGANIZATION

IX CONSULTATIONS, CO-OPERATION AND FACT-FINDING

X ASSISTANCE

XI ECONOMIC/TECHNICAL DEVELOPMENT

XII- XVI RELATION TO OTHER AGREEMENTS, AMENDMENTS, DURATION, SIGNATURE, RATIFICATION, ENTRY INTO FORCE, LANGUAGES

SCOPE: WHAT IS PROHIBITED?

DEVELOPMENT, PRODUCTION, STOCKPILING, ACQUISITION, TRANSFER,
[PREPARATIONS FOR USE,] OF CHEMICAL WEAPONS.

AID, ENCOURAGEMENT, OR INDUCEMENT TO OTHERS IN DOING SO

CHEMICAL WEAPONS PRODUCTION FACILITIES

ANTI-CHEMICAL PROTECTION IS NOT PROHIBITED

DEFINITIONS:

CHEMICAL WEAPONS ARE:

TOXIC CHEMICALS AND PRECURSORS EXCEPT FOR PURPOSES NOT
PROHIBITED BY CONVENTION

CATEGORY I SUPER-TOXIC LETHAL AND BINARY
COMPONENTS WITH NO OTHER USE: NERVE AGENTS,
MUSTARD, QF, QL, SAXITOXIN

CATEGORY II KEY PRECURSORS WITH LIMITED PEACEFUL USE:
P-ME, P-ET, P-PROPYL, THIODIGLYCOL

CATEGORY III HIGH VOLUME COMPOUNDS THAT MIGHT BE USED
FOR CW: PHOSGENE, HCN

MUNITIONS, DEVICES SPECIFICALLY DESIGNED FOR CW

DECLARATIONS:

*DECLARE WITHIN 30 DAYS
STOCKS
FACILITIES
TRANSFERS BACK TO JAN 1, 1946 (1975)

* ON-SITE VERIFICATION IMMEDIATELY

* DESTRUCTION WITHIN 10 YEARS

VERIFICATION REGIME

"SYSTEMATIC INTERNATIONAL ON-SITE"
ALL DECLARED STOCKS AND FACILITIES

THE SINGLE FACILITY FOR CATEGORY I CHEMICALS

ALL FACILITIES DECLARED FOR CATEGORY II CHEMICALS

ALL FACILITIES DECLARED FOR CATEGORY III --DATA
MONITORING

"FACT FINDING"

"CLARIFICATION"

STATE ASKS, SECRETARIAT RESPONDS WITHIN 9 DAYS

"MANDATORY CHALLENGE"

STATE ASKS, 24-48 HOURS, QUOTAS

"AD HOC"

RANDOM WITH WEIGHTING FACTORS AND QUOTAS

ORGANIZATION

CONSULTATIVE COMMITTEE

EXECUTIVE COUNCIL

TECHNICAL SECRETARIAT

[SCIENTIFIC COUNCIL]

COSTS 200-300 \$MILLION/YEAR

TIMING

COMPLETE THE DRAFT TREATY

VERIFICATION TRIALS

BILATERAL US/USSR INFORMATION EXCHANGES
COMPOSITION AND LOCATIONS OF STOCKS
ROUTINE AND CHALLENGE INSPECTIONS

GLOBALITY: PAKISTAN, INDIA, EGYPT, IRAN NOW; IRAQ, LIBYA,
SYRIA COMING; MUST INVOLVE ISRAEL SOON

INITIAL BY NEGOTIATORS 1990-1991

SIGN BY FOREIGN MINISTERS AT SPECIAL CONFERENCE 1990-1991

ORGANIZE THE TECHNICAL SECRETARIAT, HOUSING, ETC

RATIFICATIONS: HOW TO COORDINATE?

ENTRY INTO FORCE 1993

DESTRUCTION PHASE COMPLETE: 2000 - 2003

VERIFICATION

STEPS TO CW/ QUANTITIES/ NUMBERS OF SITES/ NUMBERS OF
PERSONS/ NATURE OF FACILITIES

POPULAR MISCONCEPTIONS
DETECTION OF PAST PRODUCTION (MR. WEBSTER)
CONVERSION TO NEW PRODUCTION

STUDY AND EXPERIMENTS NEEDED

HOW MUCH VERIFICATION IS ENOUGH?

OBJECTIVE MILITARY ANALYSIS OF "DEFENSE ONLY" BASE LINE

POLITICAL VIABILITY OF US CHEMICAL DETERRENT

TRADEOFF BETWEEN ANTI-PROLIFERATION EFFECTS OF TREATY AND
THE RISK TO US OF VIOLATIONS

THE ISSUE: ATTEMPT TO BUILD AN INTERNATIONAL CHEMICAL ORDER --
VERSUS
PERPETUATE INTERNATIONAL CHEMICAL ANARCHY

OTHER APPROACHES

SLOW DOWN TREATY, INTENSIFY OTHER ANTI-PROLIFERATION EFFORTS. ALLIES OPPOSE. INTERIM EFFECT ONLY. HAVE-HAVE NOT PROBLEM.

ZONES

US-USSR MINIMAL LEVELS. LITTLE EFFECT ON OTHERS

ONLY GLOBAL BAN PROVIDES POLITICAL TOOL TO HAVE THE DESIRED GLOBAL EFFECT.

UNILATERAL SANCTIONS FOR USE AND FOR DEVELOPMENT: TRANSIENT. UNSTABLE.

LEGAL BASIS FOR NON-PROLIFERATION ACTIONS. OVERCOME BEAUROCRATIC OBSTACLES.

BUILD INTERNATIONAL CONCENSUS. NOTHING ELSE WOULD MOBILIZE WORLD OPINION. MUST CREATE A NORM. A MORAL/POLITICAL ORDER. BUILDS ON WHAT IS ALREADY THERE.

HEDGES AND SAFEGUARDS.

CHEMICAL CORPS. PROTECTIVE

INTELLIGENCE

SPECIAL BILATERAL ARRANGEMENTS.

IF PRESIDENT WANTS IT, MUST NOT LET MOMENTUM BE FRITTERED AWAY. PRESENCE IN ADDRESS TO CONGRESS SUGGESTS HE DOESN'T INTEND TO.

BUT MUST INTENSIFY BILATERAL NEGOTIATIONS
MUST IMPROVE VERIFICATION METHODS.