

# SMALL ARMS UPDATE



**Major Stuart Meyer  
Chief, Small Arms Division  
USAIC**



## Report Documentation Page

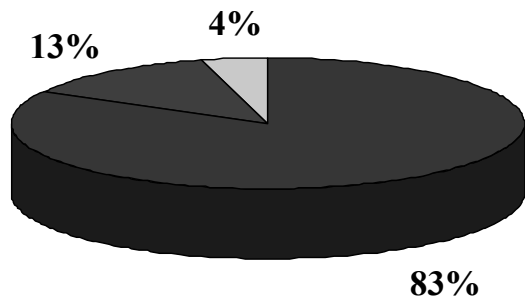
<b>Report Date</b> 13Aug2001	<b>Report Type</b> N/A	<b>Dates Covered (from... to)</b> -
<b>Title and Subtitle</b> Small Arms Update	<b>Contract Number</b>	
	<b>Grant Number</b>	
	<b>Program Element Number</b>	
<b>Author(s)</b> Meyer, Stuart	<b>Project Number</b>	
	<b>Task Number</b>	
	<b>Work Unit Number</b>	
<b>Performing Organization Name(s) and Address(es)</b> USAIC	<b>Performing Organization Report Number</b>	
<b>Sponsoring/Monitoring Agency Name(s) and Address(es)</b> NDIA (National Defense Industrial Association) 211 Wilson Blvd, STE. 400 Arlington, VA 22201-3061	<b>Sponsor/Monitor's Acronym(s)</b>	
	<b>Sponsor/Monitor's Report Number(s)</b>	
<b>Distribution/Availability Statement</b> Approved for public release, distribution unlimited		
<b>Supplementary Notes</b> Proceedings from the 2001 Joint Services Small Arms Symposium, Exhibition & Firing Demonstration 13-16 August 2001 Sponsored by NDIA		
<b>Abstract</b>		
<b>Subject Terms</b>		
<b>Report Classification</b> unclassified	<b>Classification of this page</b> unclassified	
<b>Classification of Abstract</b> unclassified	<b>Limitation of Abstract</b> UU	
<b>Number of Pages</b> 8		

# Current Programs

- OICW
- OCSW
- Long Range Sniper Rifle
- Joint Service Combat Shotgun
- Rifle Launch Entry Munition
- M203 Rail System

# Soldier System of Systems (SoS) STOs

**STO Breakdown by Quantity**



■ Non-Soldier STOs = 196

■ Soldier SoS STOs (Non-Infantry) = 30

■ Soldier SoS STOs (Infantry) = 10

Less than 5%

# SOLDIER AS A SYSTEM DEFINITION

**SOLDIER AS A SYSTEM INCLUDES ALL SOLDIERS AND THOSE ITEMS OF EQUIPMENT THAT ARE WORN CARRIED, OR CONSUMED BY THE SOLDIER. IT INCLUDES ALL ITEMS IN THE SOLDIER'S LOAD AND THOSE ITEMS OF EQUIPMENT REQUIRED TO ACCOMPLISH UNIT MISSIONS THAT MUST BE CARRIED BY THE SOLDIER (E.G.CREW-SERVED WEAPONS, UNIT RADIOS)**

**SOLDIER SYSTEM MNS DEC 2000**

# CURRENT / PROPOSED PROCESS

REQUIREMENTS

M4MWS  
JAVELIN  
TWS  
PVS-7/14  
PEQ-4C  
INTERCEPTOR  
MOLLE  
PRC-126

**CHALLENGES:**

INTEGRATION AND ANALYSIS OF REQUIREMENTS TO MAXIMIZE SOLDIER CAPABILITY

BALANCING PERFORMANCE  
STANDARDIZATION  
POWER  
WEIGHT  
COST

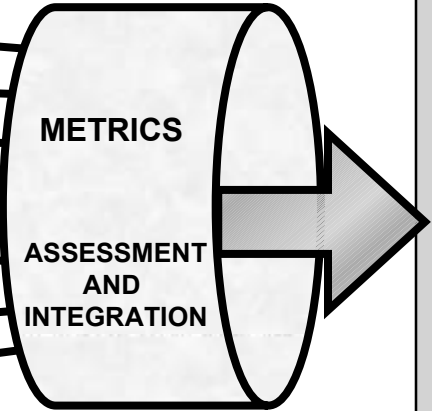
2000

2010

2015

20XX

REQUIREMENTS



M4MWS  
JAVELIN  
TWS  
PVS-7/14  
PEQ-4C  
INTERCEPTOR  
MOLLE  
PRC-126

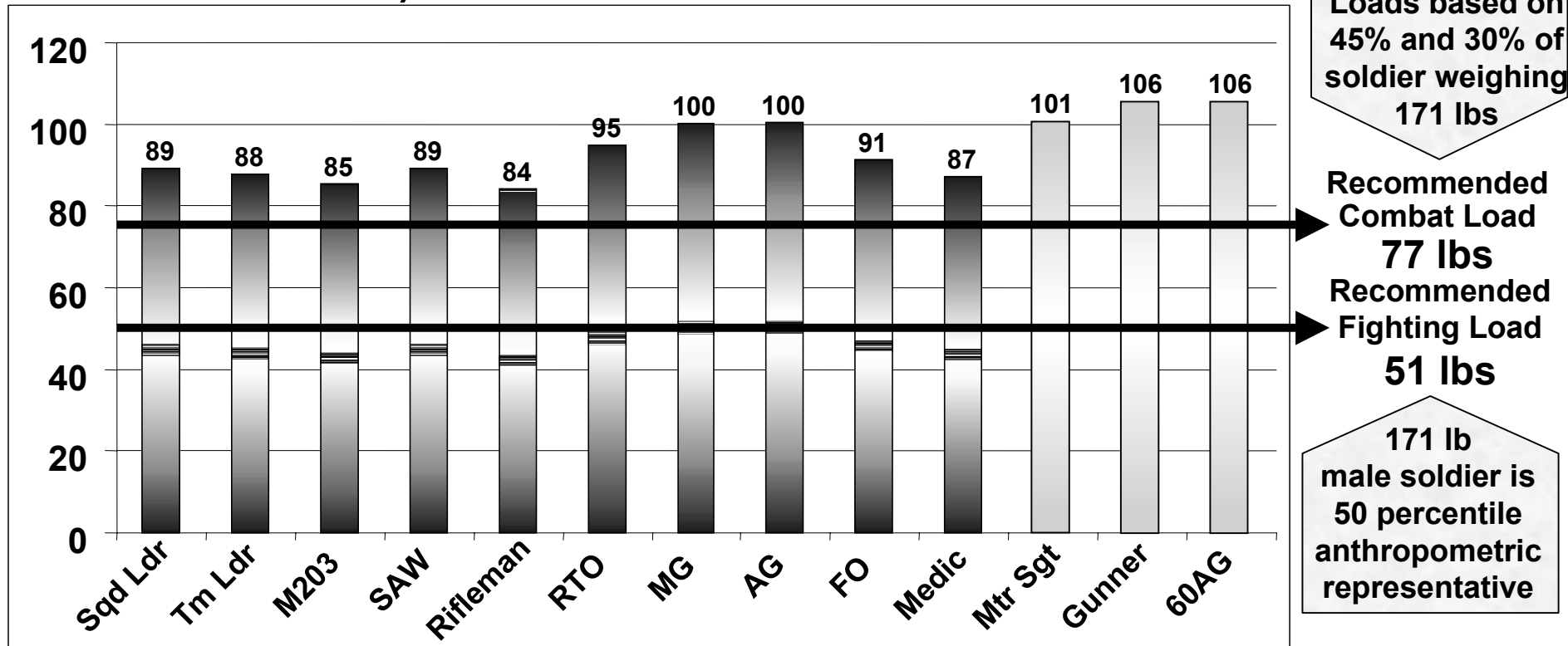


# ILLITY METRIC

	METRIC	DOCTRINE
<b>LETHALITY</b>	POINT TARGET - 500 METERS AREA TARGET - 600 METERS SUSTAINED RATE OF FIRE - 80-90 RPM	FIREPOWER IS THE CAPACITY OF A UNIT TO DELIVER EFFECTIVE FIRES ON A TARGET. FIREPOWER KILLS OR SUPPRESSES THE ENEMY IN HIS POSITIONS, DECEIVES THE ENEMY, AND SUPPORTS MANEUVER. (FM 7-8)
<b>SURVIVABILITY</b>	INDIVIDUAL PROTECTION FROM FRAGMENTATION: - HAND GRENADES / MORTARS BALLISTICS: 5.56 / 7.62	PROTECTION IS THE PRESERVATION OF THE FIGHTING POTENTIAL OF A FORCE SO THAT IT CAN BE APPLIED AT THE DECISIVE TIME AND PLACE (FM 7-8)
<b>MOBILITY</b>	50TH PERCENTILE MALE - 171 LBS MAX COMBAT LOAD - 77 LBS MAX FIGHTING LOAD - 51 LBS	THE MOVEMENT OF TROOPS AND EQUIPMENT MAINLY BY FOOT WITH LIMITED SUPPORT BY VEHICLES (FM 21-28) (FM 7-8)
<b>SUSTAINABILITY</b>	BATTERY REQUIREMENTS PVS14 - 72 HR. REQMT: 4 JAVELIN - 72 HR. REQMT: 4 TWS(L) - 72 HR. REQMT: 24	COMBAT LOAD 72 HOURS OF BATTERIES. RESUPPLY WOULD OCCUR EVERY OTHER DAY WITH 72 HR OF BATTERIES (GIVES A 24 HOUR BUFFER) OR EVERY DAY WITH A 24 HR SUPPLY (IBCT) O&O
<b>C<sup>2</sup></b>	INDIVIDUAL RANGE: 700 METERS	COMMUNICATIONS SUPPORT MISSION REQUIREMENTS

# LOAD OBSERVATIONS

Combat Load should not exceed 45% and Fighting Load should not exceed 30% of body weight (Technology Demonstration for Lightening the Soldier's Load, Natick, 1988 -- basis for load limits in FMs 7-8 & 21-18)



**Average Soldier Load at the Platoon Level is 91 lbs.**

\*JRTC Training Trends Analysis, Soldiers Load, 30 MAR 00

# SOLDIER AS A SYSTEM EMPLOYMENT CONCEPT METRIC / "ILLITY" ASSESSMENT

## DESCRIPTION:

5.56mm Shoulder Fired  
Weapon, Gas Operated, Air  
Cooled, Magazine Fed, with  
a Collapsible Buttstock  
Fire in Either Semi, Three  
Round Burst or  
Automatic(M4A1)



**M4 CARBINE**

**WEIGHT:** 7.5 lb. W/30 rd mag.

**POWER:** N/A

**COST:** \$615.00

**REFERENCES:** TM 9-1005-319-10  
OPERATORS MANUAL FOR THE  
CARBINE, 5.56 MM M4, OCT 1998  
FM 23-9 RIFLE MARKSMANSHIP

## LETHALITY:

### MAX EFFECTIVE RANGE:

POINT 500 METERS  
AREA 600 METERS  
FROM PRONE  
SUPPORTED  
POSITION

MAX RANGE:  
3600 METERS

## RATES OF FIRE:

SUSTAINED 12-15 RPM

### MAX EFFECTIVE RATE OF FIRE:

SEMI - 45 RPM

BURST - 90 RPM

CYCLIC - 700-970 RPM (M4A1)

## SURVIVABILITY: N/A

### MOBILITY:

REDUCED WEIGHT

M16A2 - 8.79 lbs

M4 - 7.5 lbs

### SUSTAINABILITY:

N/A

C<sup>2</sup> : N/A