

# *Swedish Small Arms Programs*

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# Försvarets Materielverk (FMV)



FMV is the technical and procuring agency for the Swedish armed forces.



FMV receives assignments from the armed forces for the development, procurement, upkeep and subsequent de-mil of all defense materiel.



We date back to *1630!*

# The Vasa ship was the reason...



After the Vasa sunk on her maiden trip in 1628, king Gustavus Adolphus decided that he wanted to have his own procurement agency, and FMV's predecessor was founded two years later.

# Current Swedish small arms

5.56 mm Ak 5



12.7 mm Barrett



12.7 mm HMG  
M2HB QCB



7.62 mm PSG 90



5.56 mm Minimi



40 mm AGL Mk 19



9 mm Glock 17



7.62 mm MAG 58

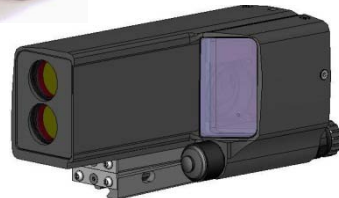
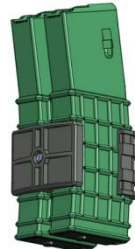
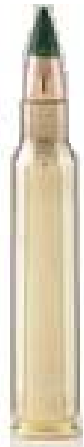


40 mm GL M203



# Ongoing small arms projects

- ▶ Ammo (Green, APHC, Dim Tracer)
- ▶ Ak 5 upgrade
- ▶ PSG 90 upgrade
- ▶ Accessories
- ▶ NLW
- ▶ Integrated light and laser module
- ▶ Minimi Para TR
- ▶ MAG 58 upgrade
- ▶ FN M3M HMG
- ▶ FX Simunition kits
- ▶ Future grenade launchers
- ▶ Kongsberg Protector

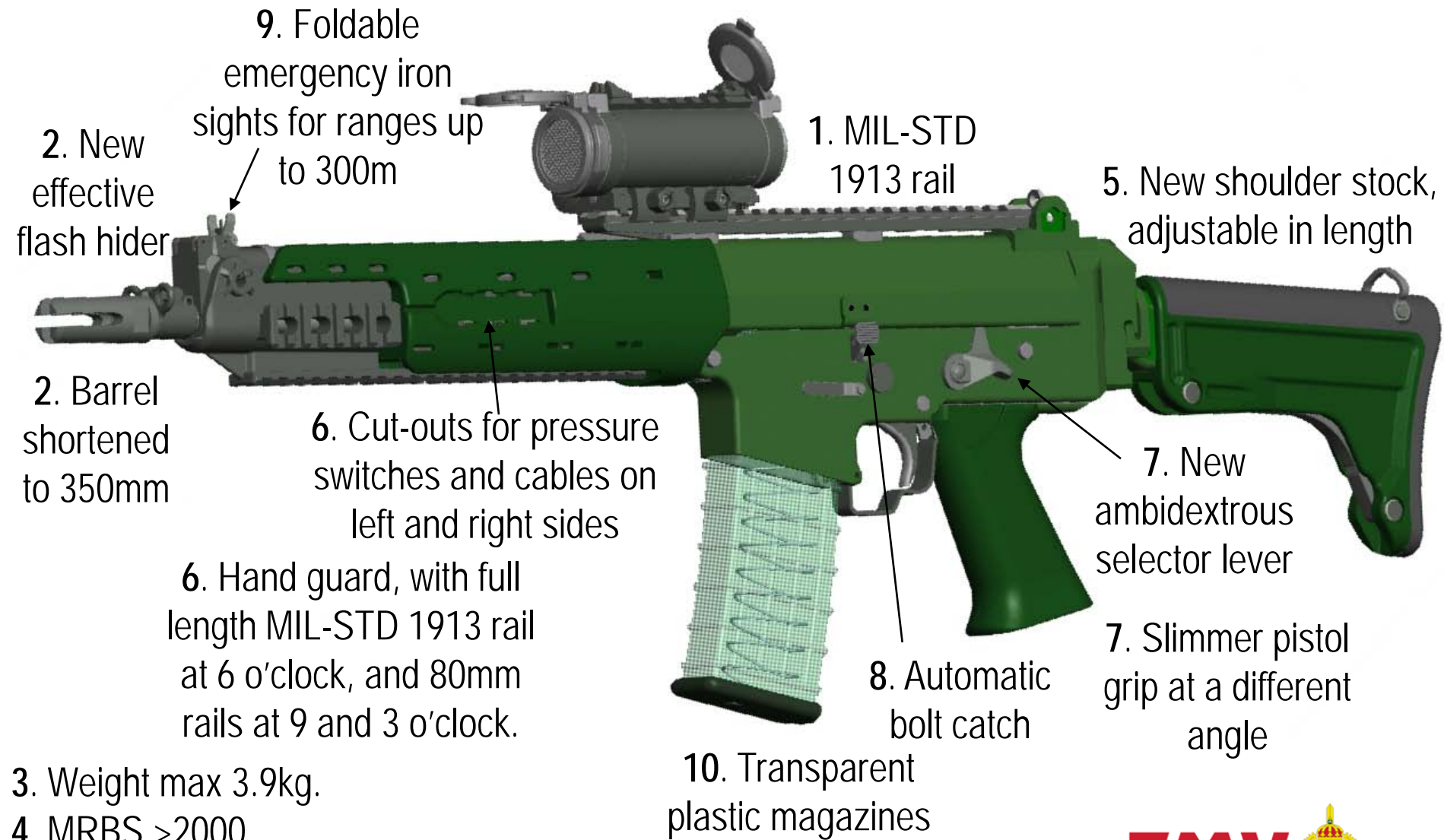


# Ak 5 upgrade program

- ▶ Extensive tests during 2003-2005.
- ▶ Industry contract with Saab Bofors Dynamics in 2005.
- ▶ Modification of 40,000 weapons in 2006-2010.
- ▶ Ak 5C is the primary weapon for all Swedish Soldiers.



# User priorities on ak 5C



# Swedish red dot sight for small arms

- ▶ Manufacturer: Aimpoint AB
- ▶ Type: Red dot sight
- ▶ Magnification: None
- ▶ Battery life: >10 years
- ▶ Rail: Mil-Std-1913
- ▶ Deliveries: 2003-2006
- ▶ Will be used on all rifles and machine guns.



Aimpoint CS





# AGL Competitors

- ▶ *Nammo Raufoss/General Dynamics*  
(Norway/USA/Canada): *Striker/ALGL/Mk47*
- ▶ *Singapore Technologies Kinetics/ Oerlikon*  
*Contraves Pyrotec* (Singapore/ Switzerland):  
*Tiger/SLWAGL*



# Striker/ALGL/Mk47



- 18 kg
- 250 rds/min
- Short recoil operated
- Fires from closed bolt

Raytheon "LVS" Fire Control System with day and night channel.

# Tiger/SLWAGL



Muzzle  
coils

- 18 kg
- 350 rds/min
- Recoil operated
- Fires from open bolt

FCS with  
optical day  
channel

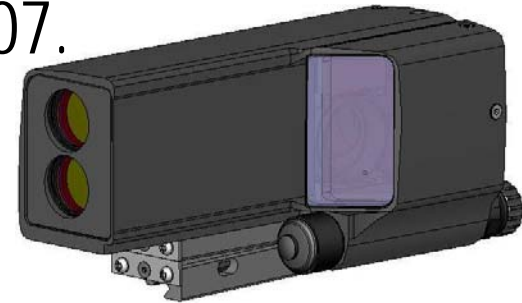
# Current Swedish AGL status

- ▶ Mk19 in service since 1993.
- ▶ Users want a lighter system with FCS and programmable ammo.
- ▶ Nordic AGL program during 2000-2005.
- ▶ Sweden found that none of the systems at that time was mature for adoption.
- ▶ Swedish tests will continue on a small scale during 2009.
- ▶ Sweden delayed its procurement until 2010 with deliveries in 2011-2012.



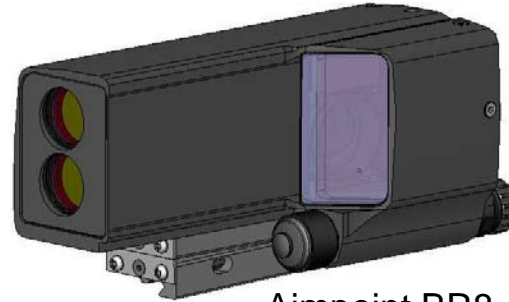
# Swedish FCS development

- ▶ Trials with AGL's with different FCS's, and a market study showed that there was no simple, lightweight, robust and affordable FCS available.
- ▶ Sweden therefore decided to develop a FCS with industry for use with under slung grenade launchers, AGL's and 84mm Carl Gustaf recoilless rifles.
- ▶ A PDF study was done in 2002.
- ▶ A development contract was placed with Aimpoint in 2005.
- ▶ Delivery of prototypes started in August -07.
- ▶ Procurement started in 2009.

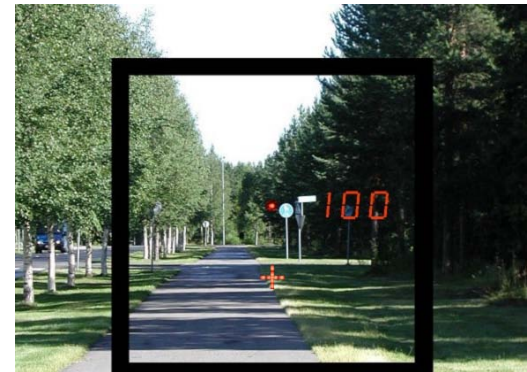
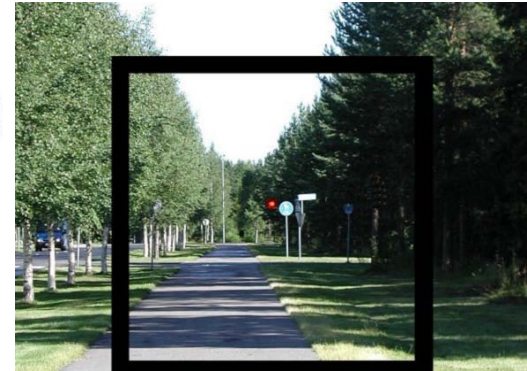


# Requirements for Swedish FCS

- ▶ Red dot for aiming and laze.
- ▶ Moving cross.
- ▶ No magnification.
- ▶ No moving parts.
- ▶ Large field of view (20°)
- ▶ Easy to use and fast.
- ▶ High contrast in display.
- ▶ All information in display.
- ▶ Accurate when ranging.
- ▶ Small and light (less than one kg).
- ▶ NVD compatible.
- ▶ Capability to program ammunition.
- ▶ MIL-STD 1913 rail ("Picatinny rail").
- ▶ "Long" battery life (more than one week).
- ▶ Realistic price.



Aimpoint BR8



# How it works

V0\*ToF...

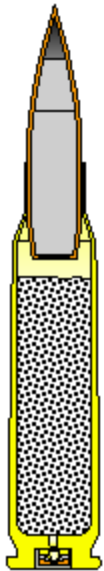


1. Aim and measure range



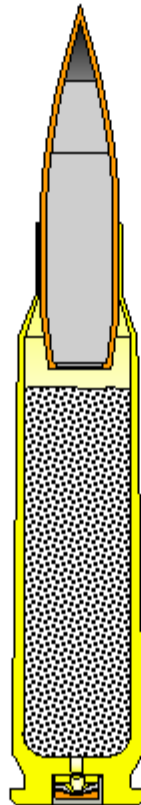
2. Realign and shoot

# Current Swedish "Green Ammo"



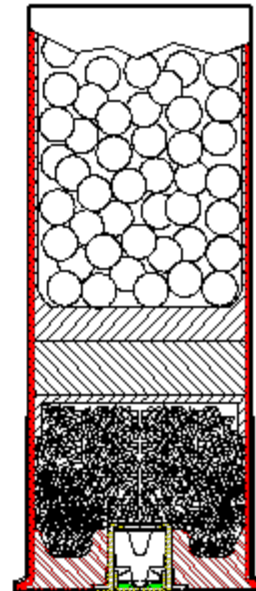
5.56 NATO

Development 1997-1999  
In service since 2000



7.62 NATO

Development 2000-2004  
In service since 2006



12 Gauge

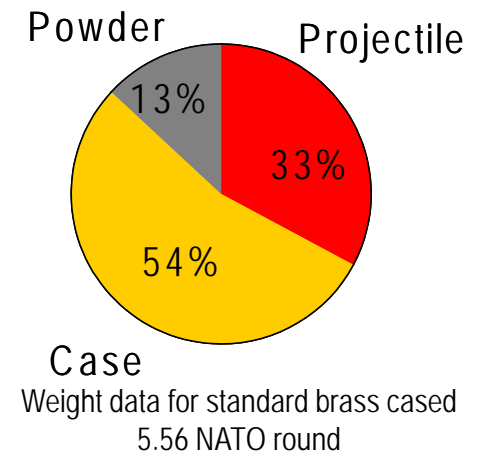
"COTS"-procurement  
2000



# 5,56 Green Ammo Mk II



- ▶ The biggest problem with future soldier systems is weight.
- ▶ We can not expect a dramatic weight reduction in future weapons or accessories.
- ▶ FMV has together with industry studied the possibility to reduce the ammunition weight.
- ▶ We studied both cartridge cases made of aluminum and steel.
- ▶ A reduction of up to 30% of the cartridge weight is possible.
- ▶ FMV will let industry compete for a development contract.



# Swedish future rifle program

2005

2010

2015

2020

2025



2010

Final report NATO RTO Study on future small arms

Ak 6

2014

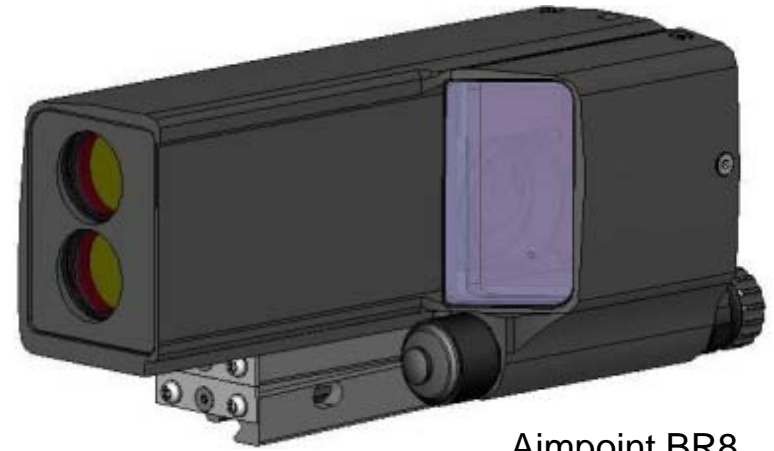


**FMV**





Aimpoint CS



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# Questions?



General Dynamics MK47



Ak 5C