

# MSRG/SG-07 Familije ručnih bacača granata revolverskog tipa kalibra 38mm i 40 mm

Piše  
Aleksandar Lijaković

**R**učni bacači granata pripadaju kategoriji sredstva pešadijske lake vatrenе podrške. U ovu kategoriju se obično svrstavaju i tromblonske mine, ručni lanseri raketa ili ručna bestrzajna oruđa opremljena bojnim glavama parčadno rušećeg, pojačanog rušećeg ili zapaljivog dejstva, koji su u novije vreme zamenili klasične bacače plamena, te, po nekim klasifikacijama, i borbene puške sačmarice. Ovim sredstvima može se uslovno pridružiti i minobacač tipa "komando", budući da, kao i sve kategorije prethodnih sredstava, to oružje prenosi jedan poslužilac koji ga može i samostalno upotrebljavati u zavisnosti od taktičke situacije.

Sva navedena sredstva, sa izuzetkom klasičnog bacača plamena koji je, iz više razloga, uglavnom povučen iz upotrebe u armijama sveta tokom 80-ih i 90-ih godina prošlog veka, svojom masom i gabaritima, uključujući i muničijski komplet, ne smanjuju izrazito pokretljivost pešaka-poslužioca i omogućavaju da poslužilac bude formacijski naoružan i klasičnom jurišnom puškom ili automatom koje može da koristi praktično nezavisno od sredstva podrške. Posebna potkategorija ovih sredstava jesu tromblonske mine, bacači ručnih bombi koji se montiraju na usta cevi, kao i podcevni bacači granata koji se ugradjuju ispod osnovnog naoružanja - automatske puške i predstavljuju dopunu, odnosno povećavaju vatrenu moć i proširuju dijapazon upotrebe osnovnog naoružanja pružajući mu svojstva sredstva vatrenе podrške.

Sredstva su namenjena bliskoj vatrenoј podršci pešadijskih jedinica - neutralisanju protivnika koji nije izložen neposrednom dejstvu streljačkog naoružanja - koji se nalazi u zakkonima ili fortifikacijskim objektima poljskog ili urbanog tipa, ili iza prirodnih i urbanih prepreka, uglova zgrada i sl., kao i za dejstvo protiv lakooklopljenih borbenih vozila, zadimljavanje bojišta i sl. Ta sredstva čine pešadijsku jedinicu manje zavisnom od drugih

# MSRG/SG-07 Families of Revolver-type Grenade Launchers, cal. 38mm and 40 mm

By  
Aleksandar Lijaković

**H**and-held grenade launchers belong to the class of weapons providing light fire support to infantry. The same category usually includes rifle grenades, hand-held rocket launchers and hand-held recoilless weapons with fragmentation-high explosive, enhanced high explosive or incendiary warheads (the latter have of recent replaced conventional flame throwers), and, according to some classifications, combat shotguns. To this list "commando" mortar could be tentatively added being that, as all other previously mentioned weapons, it is carried by single person who can operate it autonomously, depending on tactical situation.

All above listed weapons, except the conventional flame thrower which, for a number of reasons, was decommissioned from service by most armies in 1980-ies and 1990-ies, with their mass and dimensions, including combat set of ammunition, have no significant adverse effect on mobility of infantryman-operator, allowing him to carry also



vidova vatrene podrške, te u tom smislu, omogućavaju samostalno izvršavanje složenijih taktičkih zadataka, što je posebno značajno za specijalne i antiterorističke jedinice.

Pojava, tj. intenzivan razvoj sistema nesmrtonosno oružje - municija (u poslednje vreme koristi se sve više termin manje smrtonosno) upravo je našao najveću primenu u ovoj kategoriji sredstava, što je rezultovalo povećavanjem njihovog značaja. To se pre svega odnosi na granate kalibra 37/38 mm (1.5"), 40 mm, tromblonske mine i ručne / ručno-lansirne bombe namenjene lansiranju sa osnovnog naoružanja, razvijene na bazi pirotehničke smeše koja izaziva snažan pucanj i blesak („Flash-bang“ u zapadnoj literaturi) za privremeno onesposobljavanje protivnika; dimne smeše na bazi hemijskog sredstva za privremeno ones-



*Na bazi navedenog rešenja, na inicijativu i uz podršku Jugoimport-SDPR, razvijeno je oružje analogne konцепције, označe MSRG-40, sa olučenom cevi, koje je prilagođeno korišćenju municije 40x46 mm, uključujući sve poznate tipove municije. Oružje se spolja razlikuje od prethodnog modela po preklapajućem kundaku i primeni drugačijeg nišanskog sistema, koji se sastoji od optičkog nišana koji se montira na „picatini“ šinu razvijenog za oružje ovog tipa koji omogućava precizno gadjanja na daljinama od 50 do 375m, dok je maksimalan domet pri posrednom gadanju preko 400m. Budući da se nišanski sistem montira na standardnu „picatini“ šinu, moguća je primena različitih dnevnih i noćnih optičkih nišana, refleksnih nišana i dr.*

*Osim navedenog rešenja, u preduzeću PPT, takođe na inicijativu Jugoimport-SDPR, razvijeno je i drugo konstrukciono rešenje familije bacaca granata kalibra 38 mm i 40 mm označe SG-07 40 i SG-07 38: Doboš sadrži šest komora, a mehanizam obrtanja doboša je rešen pomoću zavojne opruge koja se napinje pre gadanja, odnosno pri punjenju doboša, dok se napinajanje udarnog mehanizma i okidanje vrši na principu revolvera dvostrukog dejstva. Proizvodnja oružja zasniva se na tehnologijama preciznog liva, kovanja i rezanja. Materijal za izradu oružja jeste legura aluminijuma, dok se za izradu mehanizama koristi čelik. Kod modela 40 cev je olučena, a kod modela 38 cev je glatka. Masa oružja iznosi 5,4 kg, dužina sa preklopom kundakom iznosi 600 mm, a sa ispruženim 825 mm. Obe varijante opremljene su nosačem nišanskog sistema sa picatini šinom i optičkim nišanom. Uspešno dejstvo ostvaruje se od 50 do 375 m neposrednim gadanjem, i od 200 do 400m posrednim gadanjem. Sistem oružje-municija SG-07 40 omogućava precizno dejstvo (ubacivanje projektila kroz prozor, pogadanje vozila i sl.) na daljinama preko 150 metara, odnosno pogadanje prostornog cilja do daljina maksimalnog dometa. Radijus efikasnog dejstva parčadi iznosi preko 10 m.*

his standard issue assault rifle or submachine gun and to use it independently from his fire support weapon. Special sub-class of fire support weapons consists of rifle grenades and hand grenade launchers fitted to assault rifle muzzle, as well as grenade launchers mounted under assault rifle barrel –

s u p p l e m e n t a r y weapons that enhance fire power and expand the range of use of basic weapons giving them additional fire support capacity.

These weapons are designed for close fire support to infantry units – neutralizing the adversary not exposed to small arms fire – staying under cover or in field or urban fortifications, behind natural or man-made obstacles, corners of buildings, etc., as well as for engaging of lightly armored combat vehicles, for making of smoke screen over battle area, and similar.

*Based on the above design, on initiative and with support of Jugoimport-SDPR, another weapon of corresponding concept was developed, designated MSRG-40, employing rifled bore and adapted to use all known types of 40x46mm ammunition. Outwardly, this launcher differs from its predecessor by having folding stock and different sighting system consisting of optical sight mounted on “piccatini” rail, developed for similar launchers, allowing accurate aiming at ranges of 50-375 m. Its maximum range is 400 m. Being that “piccatini” rail permits fitting of different sights, it is possible to mount various reflex sights, etc.*

*In addition, also upon initiative of Jugoimport-SDPR, PPT has developed another design for a family of grenade launchers cal. 38 mm and 40 mm, designated SG-07 40 and SG-07 38. It features 6-round drum, drum revolving by means of helical spring which is wound prior to firing, resp. during drum loading, while cocking of triggering mechanism and firing employs the principle of double-action revolver. The weapon is manufactured by investment casting, forging and cutting. Materials used are aluminum alloy and steel used for the mechanisms. Model 40 employs rifled bore; model 38 has smooth bore. Weapon mass is 5.4 kg, length with folded stock is 600 mm, with extended stock overall length is 825 mm. Both versions use “picatini” mounting rail and reflex “red dot” sight enabling two-eye open shooting procedure. Effective range is 50 m to 375 m by direct fire and 200 m to 400 m by indirect fire. The SG-07 40 weapon/ammunition system ensures precision firing (hitting of house window or a vehicle) at direct ranges up to 150-200 m, and hitting of area targets up to weapon’s maximum range. Lethal effect of grenade fragments is in excess of 10 m.*



posobljavanje (CS) i takozvanih gumenih metaka za onesposobljavanje protivnika neposrednim udarom bez fatalnih posledica.

Uvođenjem projektila navedenih kategorija dejstava u muničijske komplete navedenih sredstava značajno se proširuje dijapazon njihove taktičke upotrebe (omogućava se upotreba

*Približno u isto vreme pojavili su se automatski bacači granata, koji se, osim u pešadijskim verzijama, ugrađuju i na borbena i neborbena vozila. Američki kalibar je 40 mm, a ruski 30 mm, na osnovu kojega je i u Srbiji Zastava Oružje razvila automatski bacač granata M93 30 mm. Municija je razvijena u Slobodi. Max. domet iznosi 1700 m, brzina gađanja od 50-120 do 350-400 metaka u minuti, masa 45 kg. Saglasno iskustvu iz pešadijske i protivpešadijske borbe vođene tokom oružanih sukoba u 20. veku, a po kome je najveći broj pešaka neutralisan dejstvom parčadi, u američkim OS započeto je intenzivno istraživanje i razvoj osnovnog ličnog pešadijskog naoružanja kod koga je osnovni mehanizam dejstva upravo baziran na granati. Koncept je bio tehnički vrlo komplikovan, te je razvoj prekinut. Međutim, čitav projekat ukazuje na značaj bacača granata kao efikasnog oružja za podršku pešadije namenjenog masovnoj upotrebi.*

This category of weapons makes infantry units less dependent of other forms of fire support, thus enabling them to autonomously accomplish more complex tactical missions – an asset for special and antiterrorist units.

Appearance and intensive development of non-lethal weapon systems and ammunition (of late they are frequently called “less than lethal”) has found their widest use within this category of weapons, contributing to their importance. Prominent places among them belong to grenades cal. 37/38 mm (1.5”), 40 mm, rifle grenades and hand grenades or those launched from infantry arms, developed based on pyrotechnical compositions that create loud report and flash (called “flash-bang” in Western literature) temporarily disabling the enemy, smoke compositions for temporary disabling based on chemical agents (CS) and the so-called rubber bullets whose impact neutralizes a target without fatal effect.

Including of projectiles having above listed effects in ammunition sets of described support weapons significantly enhances the scope of their tactical use (application in containing of public riots, etc.) and increases combat effectiveness, particularly in anti-terrorist warfare in urban environment, being that some results of less than lethal ammunition, particularly CS, are more effective, in final score, than the results achieved by using lethal fragmentation, high-explosive ammunition. It shall be remembered, however, that the use of CS projectiles is limited, according to convention, only to fighting terrorists and rebels, that is during domestic conflicts. The defence industry of former Yugoslavia, latter FRY and SCG, according to their armed forces' development doctrines, used to develop infantry hand launchers and rocket launchers primarily intended for anti-armor combat, however, always pointing out their secondary support role. On the other hand, development of rifle grenades of varied combat effect (shaped charge, fragmentation, smoke, illuminating and more recently chemical, non-lethal, CS charge) was intensively pursued since 1950-ies. Development of non-lethal ammunition, hand grenades and launcher grenades also received significant attention, especially in recent times. Within last several years a new warhead of enhanced demolition (thermobaric) effect was developed for integration in AT launcher OSA cal. 90 mm, for infantry fire support missions. Main warhead was retained to combat armor.

*Ide u fus-notu, ispod teksta: Approximately at the same time, there appeared automatic grenade launchers which, in addition to infantry version, were mounted on combat and utility vehicles. Adopted calibers were 40 mm by the US and 30 mm by Russia. Zastava had developed automatic grenade launcher cal. 30 mm M93, grenades were developed by Sloboda. Maximum range is 1700 m, rate of fire is 50-120 resp. 350-400 grenades/minute, launcher weighs 45 kg. Based on experiences from infantry and counter-infantry warfare throughout the 20th Century, showing that majority of infantry casualties were caused by fragments, US military launched intensive research for main infantry weapon that would use grenade effect. The concept was technically very complex and was, therefore, abandoned. Nevertheless, the project indicated the significance of grenade launchers as effective infantry fire support devices, suitable for massive use.*