**MOUNTING SOLUTIONS PLUS**

*Presents:*

# LIGHTLINK'S


# ONE-LIGHT SYSTEM

# *LightLink's One-Light System*

## I. INTRODUCTION - TACTICAL LIGHTING LIMITATIONS & SOLUTIONS

*LightLink's One-Light System* is a unique new product line which solves a number of problems involving, and introduces a number of significant new benefits to, firearms tactical lighting.

### *A. Limitations & Problems*

Currently, most firearms tactical lights are dedicated to a single weapon, and are permanently mounted. A different light must be purchased for each weapon or lighting system. As a result, these dedicated tactical lighting systems:

1. Are inflexible;
2. Are often very expensive; and
3. Add considerable weight to be carried by the user.

In addition, not all tactical lights have sufficient internal protection to protect the light structures from the vibrations and stresses of recoil.

### *B. Solution*

The *LightLink* product line solves these problems by permitting a single light to be used in multiple lighting roles and on multiple weapons, resulting in:

1. Increased tactical lighting flexibility;

2. Reduced tactical lighting cost;

3. Reduced total weight to be carried by the user; and

4. Recoil protection for ***ALL*** tactical lights and firearms accessories.

For example, consider the cost of a small general purpose flashlight, a dedicated handgun tactical light, a dedicated rifle tactical light, a dedicated shotgun tactical light, and a dedicated hands-free search light -- the retail cost will exceed $1,000.00. Also consider the weight issue - tactical lights (and the accompanying batteries) add weight to each weapon, disturb the balance of the weapon, and the extra weight becomes cumbersome in the field.

Conversely, with *LightLink's One-Light System*, a single tactical light (less expense and weight) can serve literally all tactical lighting needs on all weapons, with the added advantages found in the patented *LightLink* recoil protection system.

## 2. UNIVERSAL INSTANT MOUNT/DETACH SYSTEM

The *LightLink* product line address the flexibility, weight, and expense issues through the use of a universal instant mounting and detachment system. Tactical lights can be mounted and dismounted in a matter of seconds, in complete darkness, ***without tools***. Only a single tactical light need be purchased and carried, resulting in significant savings of both money and weight -- and a concomminent increase in tactical lighting flexibility.

*LightLink* products are of the same genre as seen in the Glock, Streamlight (InSite Technologies), Springfield Armory, and Laser Products (Surefire) product lines. All are small and powerful tactical lights, which can be instantly mounted and dismounted from handguns utilizing a rail or dovetail mounting system.

Streamlight M3

Surefire

All Lights With ARMS #17 Mount

Glock

Springfield Armory

The tactical lighting and firearms industries have made relatively few efforts to extend the use of these rail-style tactical lights to shoulder fired weapons, and none have been overly successful for a variety of reasons. Primarily, these "long gun" conversions have tended to be made of plastic, and are neither accurate nor particularly durable. Moreover, the tactical lights themselves tend to lack durability in the face of the more heavy recoiling shoulder weapons - the 12 gauge shotguns common to law enforcement being a good example.

*LightLink* products solve the ***mounting system*** strength and durability problems by using heat treated aluminum. Almost as light as plastic (*LightLink's* rail weighs only 2.5 ounces), heat treated aluminum has proven far more suitable than plastic to withstand field abuse and damaging recoil forces. In addition, *LightLink* products also solve the ***tactical light*** durability problem by providing recoil protection - to a degree, and in a manner, not previously seen in the industry.

*LightLink's* patented recoil protection system protects the tactical light (or other accessory) from both the cyclical vibrations found in automatic weapons fire, and from the massive recoil from 12 gauge 3 inch magnum buckshot loads.

***THE KEY IS ADDING RECOIL PROTECTION TO THE MOUNTING SYSTEM.***

## 3. RECOIL PROTECTION REQUIREMENTS

Recoil protection is perhaps the most central issue, and has proven to be an absolute necessity. While light manufacturers claim their lights are designed to

withstand heavy recoil, in practice experience shows otherwise -- particularly under the heavy recoil of a 12 gauge shotgun. The difference in recoil between a handgun and shotgun is substantial.

It must be recalled that a 180 grain .40 S&W round, or a 124 grain 9mm NATO round, will generate roughly 5 foot-pounds of recoil in a standard weight weapon and, in a semi-auto pistol, some of that energy is absorbed by slide momentum. Conversely, the recoil of a 12 gauge 3 inch magnum 00 buckshot round can be almost nine times greater - generating up to 44 foot-pounds of recoil energy (depending on ammunition brand) in a standard weight pump shotgun, and ***none*** of the energy is absorbed through bolt momentum because the bolt is locked closed.

A total of three structures within tactical lights have proven to be vulnerable to the recoil of shoulder weapons.

### *A. Bulbs*

First, the bulb filaments have proven vulnerable. When the light is activated, the bulb filaments obviously grow hot and glow -- that's how the light works. When hot, these thin metal filaments are fragile. Tactical light manufacturers have done a remarkably good job of building recoil shielding into their lights, which indeed does protect the bulb in part. Nevertheless, heavy sudden recoil forces can and will sometimes break hot bulb filaments despite the best efforts of the light manufacturers. A number of law enforcement agencies have suffered problems in this regard, and even most manufacturers agree that bulbs do occasionally break. In truth, nothing can completely protect the delicate heated bulb filament.

Second, not all light manufacturers build recoil shielding into their lights, and those lights without recoil protection are even more susceptible to bulb filament breakage. As a result, ***additional*** recoil protection is needed for all lights used in a tactical lighting role.

### *B. Battery Casings*

Second, battery casings have proven somewhat vulnerable. Small lithium batteries often drive these lights, and the casings are frequently made as thin as possible to squeeze the maximum power out of the battery, and cut down on weight. The result is that, under heavy recoil forces, the casings can occasionally crack and, breaking the circuit, render the light useless. This problem, while not common, tends to occur more often in lights with a rigid battery containment system.

### *C. Light Structures*

Third, some lights are vulnerable in their internal structures. To minimize weight, the lights are often made of plastic, and heavy recoil forces can destroy these more delicate structures. For example, locking bars are plastic and will break or tear under heavy recoil. The Streamlight battery housing cover can sometimes be torn off the light by heavy recoil, although Streamlight states it has fixed this problem.

The design differences between the lights highlights these problems. All are very fine tactical lights and are well designed - but sufficiently different to serve as a good example of what may appear to be a problem without a solution.

For example, the Laser Products lights tend to have a very strong and rigid battery containment system that takes little damage from recoil - but which is complex

and requires a time consuming partial disassembly of the light to change the batteries. The Streamlight lights, on the other hand, permit an easy and quick change of batteries, using a simple accessible battery housing that snaps on and off.

However, the Streamlight battery containment housing cover tends to be torn off the light by heavy recoil - one round from a 12 gauge and the light may or may not work again until the housing cover and batteries are located (in the dark) and replaced. Conversely, this problem never occurs with the Laser Products lights because of the rigid battery housing, but the batteries are difficult to access.

Glock uses a vertical battery housing cover out of the line of recoil, and so does not suffer the problems of the Streamlight. However, digging out the second of two vertically stacked batteries is difficult in the dark, and so the light suffers from battery access problems.

Springfield Armory also uses a vertical battery housing cover. Unlike the others, which place battery retaining springs in the line of recoil, and so provide a certain level of protection to the battery, the Springfield Armory light uses a vertical battery placement. As such, the Springfield Armory light has easy access to the battery, and a secure battery housing cover, but the battery is vulnerable to recoil forces. A cracked battery case will require disassembly of the light, cleaning of the battery compartment, installation of new batteries, and re-assembly of the light - again all in the dark.

So, if ***only*** light design features are considered, this would seem to be a problem without a solution. All companies have done an excellent job of preventing one problem, but the price paid is a higher incidence of another problem.

### *D. Solution - Mounting System Protection*

*LightLink* products solve all these problems by relieving the light of the entire recoil protection burden, and placing ***additional*** recoil protection in the ***mounting system***. In testing, a single Streamlight M3 light survived over ***200*** rounds of 12 gauge 3 inch magnum 00 buckshot rounds without a single broken bulb, battery casing, battery housing cover, or other light structure. Not intending to be flippant, this test light genuinely tolerated the accumulated recoil considerably better than did the test shooter. This test light can be seen on request at Mounting Solutions Plus.

*LightLink* products are based on the concept of protection. Other than a weapon jamming in a low-light firefight, the worst thing that can happen is for the tactical light to break, leaving the shooter unable to illuminate potential targets. While nothing can ever guarantee that a light won't fail at the wrong moment, *LightLink* products are dedicated to minimizing the risk to the greatest extent possible -- and certainly to a greater degree than any other product on the market.

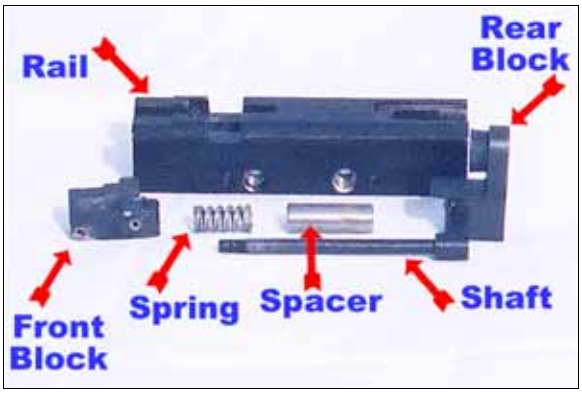
In fact, *LightLink's* patent is based on this broad concept – adding recoil protection to a universal mounting system which is capable of protecting ***all*** firearms accessories, not just tactical lights.

## 4. THE RAIL MOUNTING SYSTEM

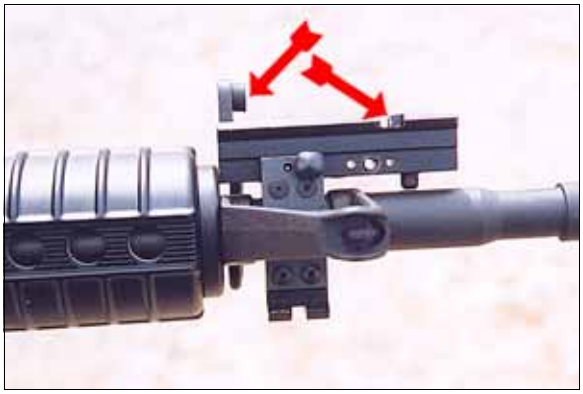
The heart of all *LightLink* products is a unique rail containing the recoil protection structures. The rail is machined from heat treated aluminum. Aluminum was selected as being almost as light as plastic, and a heat treated grade was selected as

being almost as strong as steel, yet sufficiently strong to withstand field abuse. Time has proven that heat treated aluminum is more than sufficient - the aluminum receivers of standard military issue M16A2 rifles or M4 carbines being good examples.

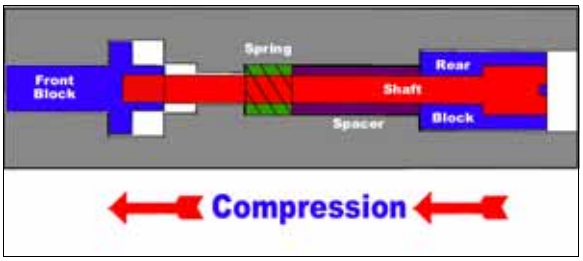
The patented *LightLink* recoil system consists of a front block, a rear block, and a shaft bearing a spacer. A custom made coil spring is placed over the shaft, followed by a spacer, and captured within the rail between the front and rear blocks. When the light (or other accessory) is placed on the rail, a locking bar rests against the front block, and the rear of the light rests under spring pressure against the rear block.




The front and rear blocks are made of metal injection molded steel, and the rear block contains a plug of neoprene spring rubber. When the light is snapped into place, the rubber plug presses the light locking bar forward against the front block. When the weapon is fired, recoil drives the light forward against the front block and the recoil forces are absorbed by the internal spring. At the end of the recoil cycle, the spring returns the light to its correct position on the rail.

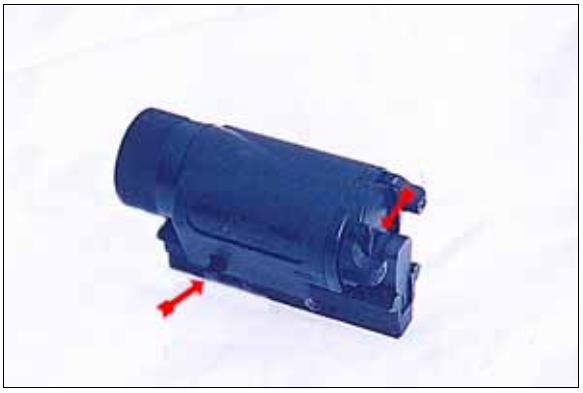


For light recoil weapons, a non-recoil protected rail variant is available.





The entire recoil cycle is very short, taking place within only 1/8th of an inch. Yet in that .125" cycle, the spring will absorb up to 62 foot-pounds of energy. In addition, when less recoil energy is produced, less movement is required since the spring absorption of energy is progressive.



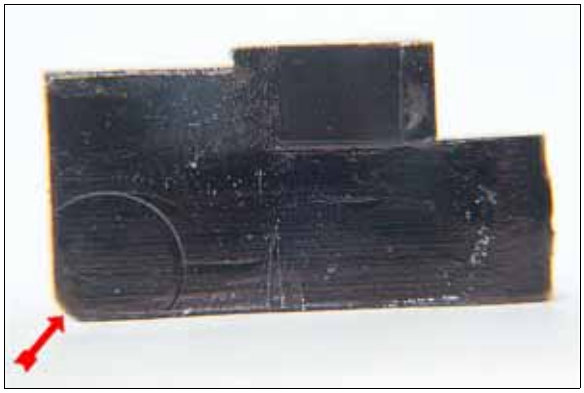
While the front block protects the bulb, the rear block serves an equally important function. When recoil drives the light forward against the front block/spring, the principles of statics dictate that the batteries will initially remain in place, and so are crushed against the rear of the light housing. This may either compress the batteries to the point that the casings fracture, or may simply tear the battery cover off the light.

*LightLink's* neoprene rubber spring plug solves this problem by absorbing this "reverse" energy. The battery housing is held in place, and the forces that would otherwise crush the batteries are instead absorbed by the neoprene.

## 5. REDUNDANT PROTECTION

This rear block/spring plug assembly highlights the level of redundant protection typical in *LightLink* products - structures designed to protect other structures which in turn are designed to protect every part of a tactical light.

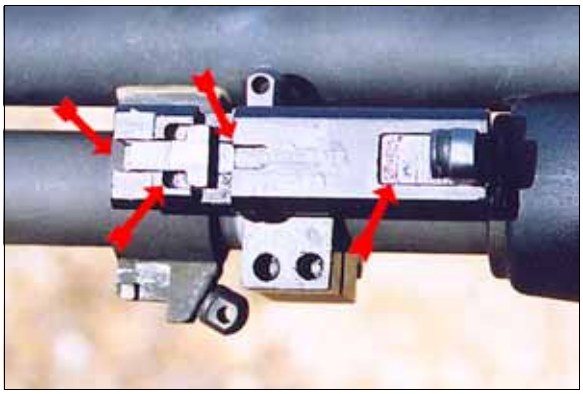
Neoprene spring rubber was selected because it will withstand pressure up to 1,000 psi, is inert in the environment, and won't react to solvents, gun oil, or water. Even this simple rubber plug is protected from side impact by recessing the spring rubber into the metal rear block. Another good example of redundant protection lies in the front block.



Obviously, the spring travel runs below the plane of the recoil, causing the front block to "nose over" under recoil pressure. The result is that the front block can cut and gall the rail interior. Instead, the front block has radius cut on the bottom. During movement, the front block actually rides back and forth on the radius.

In other words, the light is protected by the spring, which in turn is protected from direct contact by the front block, which is protected from side impact by the rail, which is protected from internal cutting movement by the front radius. The front radius itself serves no direct recoil protection function, but instead protects the recoil absorbing structures -- ***redundant protection.***

The rail and blocks are protected from intrusion of dust and dirt and grime. In the field, intrusion of dirt may jam up a moving series of parts. Within *LightLink's* rail, the forward portion of the front block channel is self cleaning, and the front block is also self cleaning. The rear portion of the front block is sealed by spring pressure except under recoil, during which the mounted light prevents dirt intrusion into the rail.



The locking bar slot is self cleaning, and even the "wings" at the top of the front block are self cleaning. The spring shaft is sealed. The extra mounting holes are sealed with plug screws. The rear block also has a shelf that seals the top of the rail from dirt and grime.

## 6. MOVEMENT

Movement, which by definition absorbs recoil energy, is not damaging to the light or accessory. All rail corners are radiused, and there are no cutting edges to damage the interior of the light dovetail. The front and rear blocks are recessed .050" at maximum travel -- neither the front or rear block ever extends beyond the end of the rail. All of the exterior edges and corners are radiused, preventing impact injury.

Movement is strictly regulated. Recall that the light is captured under spring pressure between the front and rear blocks, and the only movement during recoil is by the ***entire*** assembly. The movement is of the "return-to-zero" type, in which the light returns under spring pressure to exactly the same spot, time and time again. For a light with a broad beam, movement accuracy is not much of an issue, but for a laser or other aiming device, accuracy following movement is a serious issue.

*LightLink's* "return-to-zero" also applies to repeated mounting, and is sufficiently accurate for a laser within the range of the light. Most lasers are visible to only 25 yards (at best) in the daylight and, while lasers are visible at longer distances at night, the lights themselves are effective to about 25 yards in the dark. Stated more accurately, these tactical lights will illuminate beyond 25 yards, but may not provide enough detail to identify a threat and make a shoot/don't shoot decision.

The effective light range being 25 yards, the "return-to-zero" on the *LightLink* rail is sufficient for a laser to consistently hit a head shot at 25 yards with an MP5 or M4. The light can then be detached and re-mounted, and the same shot hit again and again after each re-mount with no adjustment. If a very powerful light is used, the "return-to-zero" is sufficiently accurate for a much longer shot (parallax issues aside).

## 7. UNIVERSAL ACCESSORY MOUNTING

The *LightLink* rail is of a unique configuration that will permit almost every accessory on the market to be mounted. For example, a Streamlight M3 can't be mounted effectively on a Picatinny rail or mounted at all on a Surefire mount. A Surefire light can't be mounted on a Streamlight rail or a Picatinny rail. An accessory

designed for a Picatinny rail or a Weaver rail can not be effectively mounted on a Streamlight or Surefire mount - and so on.

Conversely, the *LightLink* rail will accept almost every accessory designed for other mounting systems. The *LightLink* rail will take a Streamlight M3 tactical light, or a Surefire tactical light, or a laser intended for a Weaver rail, or anything intended for a Picatinny rail or an A.R.M.S. base. While those mounts are not interchangeable, they will ***all*** fit the *LightLink* rail.

## 8. MOUNTS IN GENERAL

*LightLink's One-Light System* presents the purchaser with a number of mounting choices. The rails can be permanently mounted to various weapons and a single light instantly moved from weapon to weapon. The mounts are very light (as noted, the *LightLink* rail weights only 2.5 ounces). The weight of the rail and mount represents only a minor fraction of the weight acquired when adding an entire dedicated tactical light on a permanent basis. In the alternative, a "bridging unit" can be used to mount the light and rail to the weapon only when desired. Both permanently mounted

rails and “bridging unit” rails are available for any weapon at the user’s choice - usually multiple choices are available for each weapon.

## 9. THE I-MOUNT

### *A. General Use*

For shotguns, rifles, sub-guns, etc., the “standard” permanent clamp-on style mount is called an “I-Mount”. The I-Mount is a split block of aluminum which clamps to the barrel or magazine extension. When clamped to an M4 barrel, the rear of the rail (and so the light switch), sits right at the end of the short hand guards. In other words, when a normal grip is taken on an M4 hand guard, the left thumb (if the user is right handed) is in the correct position to operate the light switch at the end of the light.

When used with a different sized I-Mount, or used with a bushing, the system will fit quite literally any barrel diameter. Examples include, but are by no means limited to:

MP5

Colt 9mm

AK47/74

M1 Carbine

Galil

FN-FAL

MAC 10/11

Ruger AC556/Mini 14

The I-Mount will not interfere with any weapon structures, such as bayonet mounts.

The I-Mount also avoids two common problems encountered with front sight assemblies. Nothing should ever be mounted directly on the front sight because stress on the front sight (and so on the gas tube assembly) can effect accuracy and reliability.

Instead, careful examination of an M16 reveals that a .075" gap exists between the bottom of the gas tube/front sight and the top of the barrel. The I-Mount, unlike most clamp mounts, is not in ***two*** pieces but rather in ***three***. The two aluminum side clamps are bridged by a .062" steel plate that fits perfectly in the gas tube/barrel gap - placing the mount behind the bayonet lug and putting no pressure on the front sight.

Second, with a .062" top plate, the I-Mount will do something no other clamp-on mount will do -- fit directly on the barrel of a weapon ***without*** blocking the critical view of the front sight. For example, the Ruger AC556 has a ½ inch high front sight. Using the

I-Mount with a .560" hole, the top plate covers only the view of the ***bottom*** .062" of the front sight, leaving the view of the ***top*** .438" of the front sight (the important part) completely unobstructed.

Ruger AC556

M1 Carbine

The 1" I-Mount fits the magazine tube of a 12 gauge shotgun, again placing the end of the rail and the light switch right at the end of the forearm. Brand is not an issue - all magazine tubes are 1" diameter. For example, the I-Mount for the common law enforcement Remington 870 also fits the mil.spec. Mossberg 590A1 - and does not block the bayonet lug. Other examples, by no means all inclusive, include the Remington 1187 and Mossberg 500.

Mossberg 590

Mossberg 500

Remington 870

Remington 1187/1100

### *B. Flexibility*

For left-handed shooters, the mount is simply reversed and the rail rotated. The I-Mount can then be mounted on the right side of the weapon so a left-hand dominant person can use his or her right thumb to operate the light switch.

With the I-Mount, the rail position is generally adjustable. With 5 mounting holes and two pin holes, the rail can be mounted in different aspects and changed over to other mounting systems.

If an I-Mount with an .875" clamping hole is used, it can be mounted directly on a vent rib 12 gauge shotgun barrel. The top plate slides between the top of the barrel and the bottom of the rib, allowing the mount to clamp on without obstructing the view of the rib or the front bead.

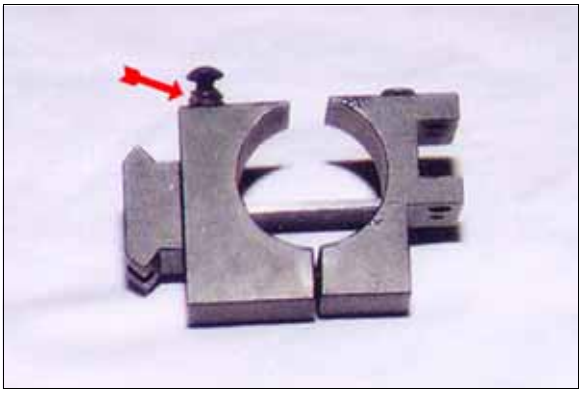
For shooters of smaller stature, who can not handle the recoil of a 12 gauge, a standard 1 inch I-Mount can be used with a bushing to mount to the 20 gauge magazine extension produced by Choate.

A non-recoil protected variant is available for light recoiling weapons.

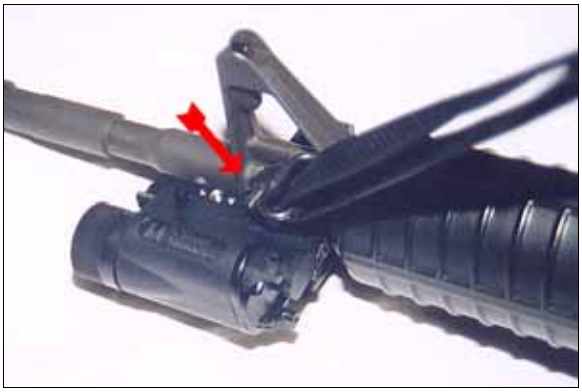
### *C. Other Features*

***Strength***: One important design feature in the I-Mount, mentioned earlier as applicable to all *LightLink* products, is strength through redundancy. For example, the rail is mounted to the I-Mount using two screws, not just one, and an additional roll pin. The top plate is mounted to the clamping blocks using two screws at each end, not just one. The clamping mechanism is through two clamping screws, not just one.

The I-Mount clamps on very tight, and will not move during firing or on impact. Aluminum is commonly mistrusted by users because screws strip out too easily. So, while the mounts are made of aluminum to reduce weight, all screws are run into steel inserts and all clamping surfaces are faced with steel bushings. All clamping and screw pressure is direct steel-to-steel contact.



***Sling Stud***: In addition, one of the two rail mounting screws is actually a quick-detach sling swivel stud of the "Uncle Mikes" type. It is mounted so that, if chosen, a top-mounted patrol-style sling can be mounted and detached directly on the I-Mount. The sling stud is off-set the correct distance so that it does not interfere with the rail or light.



As an example of the subtlety of the *LightLink* design, use of the sling will ***not*** loosen the mounting stud, and so loosen the rail during use, because the I-Mount ***must*** be assembled in the proper order. First, the top plate is secured to the left block with one screw; then the rail is secured to the left block with one screw, a roll pin, and the sling swivel stud; and only then is the ***second*** top plate screw inserted. The I-Mount can not be assembled in any other order, because the second top plate screw head locks the sling swivel stud in place and prevents it from being loosened.

***Other Accessories***: The I-Mount also permits simultaneous mounting of a second accessory. The side of the I-Mount, opposite the main rail, carries a secondary Picatinny/Weaver style rail. Of course, the second rail is not recoil shielded, but is useful for accessories that do not require recoil protection.

***Hand Position***: The only problem arising from use of the I-Mount is that, when mounted on the longer A2 barrel, the rail is positioned in front of the hand guards. For people with standard length arms, the natural hand position on the hand guard is a few inches back from the end -- and it is a stretch to reach the left hand forward to activate the light. Conversely, on the CAR hand

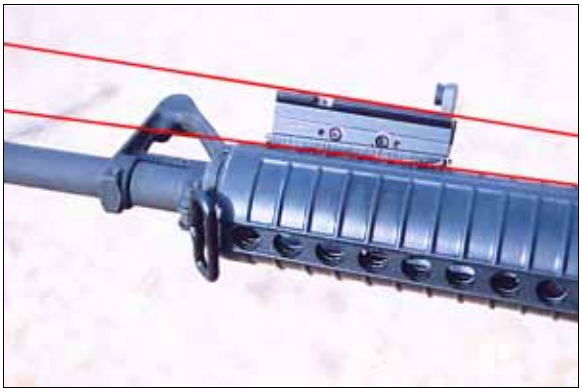
guards found on the M4, the common hand position is at the end of the hand guards, but not so on the A2 “long” hand guards.

## 10. FOREARM MOUNT

*LightLink's* solution to this problem is the forearm mount. The A2 “long” hand guard mount places the rail directly on the hand guard at 10:30 on the clock face, back three inches from the end of the hand guards, in the perfect position to activate the light switch with the left thumb. Moreover, a significant detail is addressed by the *LightLink* forearm mount - one which is often overlooked in similar products.

A2 hand guards, unlike CAR hand guards, are ***tapered***. A light rail mounted parallel to the hand guards will ***not*** be in correct alignment with the bore and sights. The taper will send the light beam to the right of the sights - the farther the target, the farther to the right the light beam.

The *LightLink* forearm mount is different in that the rail sits on a spacer plate that incorporates an “anti-taper” angle. The rail is not aligned with the hand guards, but instead is perfectly aligned with the bore and the sights.



Strength of the hand guards has not

proven to be an issue. A2 hand guards are full of a fiberglass/strand-like substance, and are fairly strong. In addition, on the *LightLink* forearm mount, the rail is mounted to the hand guard, with screws through the spacer, using two massive fender washers which spread any impact over a huge area. The fender washers prevent any impact from breaking the hand guard at the screw hole.

The same type of forearm mount is available for other weapons. Many shotguns and rifles permit the rail to be mounted directly to the hand guard if desired. The A2 hand guards have been presented here as the most simple example.

## 11. MOUNTING ALTERNATIVES

For the user who does not want to mount the rail to the weapon permanently, and instead only mount the rail when required, *LightLink* provides a number of "bridging unit" type detachable mounts, which can be instantly mounted when desired. The mount which bears the rail is snapped onto the weapon, and the light is then mounted.

### *A. A.R.M.S. Mounts*

For the S.I.R.S. system, or any of the other Picatinny rail mounting systems, *LightLink* provides a rail affixed to an A.R.M.S. #17 base. The rail can be snapped onto a Picatinny rail in just seconds using the standard A.R.M.S. throw lever.

For longer H&K weapons, which place the bolt handle further forward from the receiver (G3, etc.), and which utilize the A.R.M.S. #1 mount, *LightLink* provides a three rail conversion - one rail for the weapon sighting system (scope, etc.), a recoil protected *LightLink* rail, and a third "opposite" Picatinny rail for another accessory.

ARMS #17

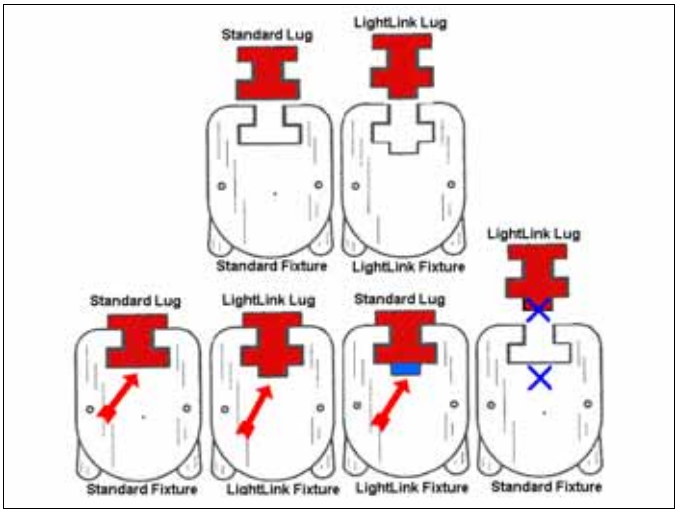
ARMS #1

### *C. Bayonet Mount*

Another bridging unit is the *LightLink* bayonet lug mount. This mount bears the *LightLink* rail and simply snaps onto the bayonet lug, placing the rail just forward of the hand guards. *LightLink* redesigned the standard M7 bayonet fixture and lug to make this mount available for post-ban weapons - upon which it would be otherwise illegal to mount a bayonet lug.

All *LightLink* bayonet style mounts come with a patented rear fixture. A key way cuts through the rear fixture, and has no effect on mounting the device on a

standard M7 bayonet lug. *LightLink* also produces a “light lug” to be mounted on the barrel of post-ban weapons. The “light lug” has a key cast into the bottom of the lug. Because of this patented key & way system, an M7 bayonet can ***not*** be mounted on the “light lug”, but




*LightLink's* tactical light mount ***can*** be mounted to the “light lug”. *LightLink's* tactical light mount can ***also*** be mounted on a pre-ban M7 bayonet lug, even though an M7 bayonet can ***not*** fit on the “light lug”.

## 12. OTHER MOUNTING SYSTEMS & USES

A tactical issue common to both law enforcement and military special operations concerns the method by which post-raid searches are conducted in a dark building. The doctrine is that the building lights are ***never*** turned on. The reason is that the building may be wired with explosives and, more commonly in the law enforcement arena, methamphetamine labs are often filled with ether fumes which are explosive in the right fuel/air ratios. Turning on a light switch can create a spark and an explosion.

Traditionally the alternative is a flashlight, which occupies one of two hands. One-handed search techniques are unsatisfactory, to the point that many law enforcement entry team members have taken to attaching a flashlight to their helmets with duct tape.

*LightLink's One-Light System* provides a hands-free alternative: the helmet mount. Once a raid site is secured, the tactical light is simply snapped off the weapon, and then snapped onto the helmet to permit a lighted hands-free search. The helmet mount requires no modification to a standard PASGT kevlar helmet, and utilizes the existing screw holes and hardware. The helmet mount is fully adjustable in any axis, and uses the same rail as the weapons mount.

Left or right side helmet mounts are identical. Right hand dominant shooters mount the rail on the left side of the helmet to avoid hitting the rifle stock; the opposite mount being used by left hand dominant persons.

This type of alternative mounting system exponentially expands the flexible use of most firearms accessories, with each accessory being made useful in multiple roles. For example, use of infra-red goggles requires an IR light source - commonly mounted on the weapon. Instead, an IR light source can now be simply snapped onto *LightLink's* helmet mount. The possibilities are limited only by the imagination.

## 13. MOUNTING OTHER ACCESSORIES

In addition to alternative mounting systems for existing firearms accessories, it may often be desirous to mount a previously unused accessory to a weapon or helmet (or anything else for that matter). Unfortunately, most devices intended to serve as a firearms accessory are based on one of the "industry standard" mounting systems.

What about accessories never before used on firearms? For such accessories, *LightLink's One-Light System* product line includes a "universal adapter", upon which literally any accessory can be mounted.

For accessories requiring recoil protection, and which are based on a rail type mounting system (many lasers, for example), a Picatinny rail is available on the universal adapter. For screw-base mounted accessories, *LightLink* presents an infinitely adjustable mounting plate for the universal adapter upon which almost anything can be mounted.

For example, wireless video is useful in both military and law enforcement applications. The command & control function is dependent on accurate real-time data, usually described by radio. Today, small wireless video cameras are available which transmit a wireless video signal for a number of miles in the 2.4 giga-hertz range.

With *LightLink*, a wireless video camera can be instantly mounted to a weapon or helmet, permitting commanders to see exactly that which is seen by the entry team. Wiring diagrams or blueprints can be instantly checked at the command center and vital

(more importantly, correct) data instantly sent back by radio to the operators. Wireless video eliminates the risk of inaccurate description of that which is seen, or the inaccurate orders which often follow.

Of course, wireless video cameras and transmitters may be somewhat delicate and sensitive to recoil forces. Instead of building massive recoil protected cameras, which destroy the utility of micro-sized devices, with *LightLink* those recoil forces are reduced to a non-issue - because the recoil protection in the ***mount*** protects ***all*** devices that do not have built-in recoil protection.

Other examples - ground based targeting lasers can now be snapped onto a weapon and aimed, a target lased and struck by a “smart bomb” or artillery shell, and the targeting laser removed immediately. A vertical IR strobe, used to identify the precise location of a night extraction, can be helmet mounted without depriving the operator of the ability to use both hands to take defensive action with a weapon.

The possibilities are, quite literally, endless. The user need only mount a selected device onto a universal adapter and then snap it onto the weapon or helmet. The mounted device will then have the same recoil protection as a tactical light.

In addition to screw mounted accessories, the Universal Adapter also is available with adapter plates, of industry standard dimensions, any style of mounting system, and even a blank adapter plate for modification as required by the user.

Through the use of adapter plates, almost any accessory can be mounted to any rail.

Folding Bi-pods

Vertical Foregrip

After mounting the accessory, whatever it might be, the universal adapter is snapped on and off the weapon, helmet, or other rail bearing surface, instantly and without tools.

## 14. ROUND LIGHTS

The other flexible use of these "universal adapters" returns the discussion full circle back to the tactical lighting role. Powerful tactical lights are available, but the most powerful of all lights are made in a round barrel configuration, and have no dovetail by which the light can be mounted on a rail. Further, for general purpose use, many law enforcement officers ***prefer*** the round barrel flashlights, such as the Surefire 9P (battery replacement) or Streamlight XT (rechargeable).

To date, there has been no way to make a ***dual*** tactical light use of these lights because there was no way to mount them on a weapon in an instant mount/detach fashion. Instead, a choice had to be made - mount the light semi-permanently to the weapon or utilize the light solely as a flashlight.

Instead, *LightLink's One-Light System* product line eliminates that choice by including a round light adapter, which is available for different caliber lights, and adjustable for variances between lights. This adapter, based on the universal adapter, has a mounted clamping device that will "grab" the round light when desired.

The round light is simply inserted and locked into place. Like the "bridging unit" mounts previously described, the adapter is then snapped onto the *LightLink* rail. To remove the light, the adapter is simply snapped off the rail and the light removed.

The universal adapter, and the round light adapter upon which it is based, provides the same level of recoil protection as is provided for rail mounted tactical lights. In other words, a round light with ***no*** internal recoil protection whatsoever will nevertheless be recoil shielded by *LightLink's* mounting system. As with rail-style tactical lights, the battery casings, light structures, and bulbs are all protected by *LightLink's* progressive spring.

## 15. MISCELLANEOUS DETAILS

### *A. Springs*

The *LightLink* spring will absorb the recoil energy for both light and heavy tactical lighting assemblies. A Streamlight M3 weights only a few ounces while an XT flashlight is considerably heavier, yet the spring handles the full range of recoil forces - up to 62 pounds of energy absorbed over a 1/8 inch compression stroke.

### *B. Locking Bars*

When ordering any *LightLink One-Light System* product, the purchaser will be asked whether a rail light will be used, and which brand, and the mounts will be delivered with a replacement metal locking bar. The plastic factory locking bars simply won't tolerate significant recoil. In fact, the Streamlight/InSite Technology M6 lights are now coming out with a similar aluminum locking bar to replace the previous plastic bar.

Streamlight

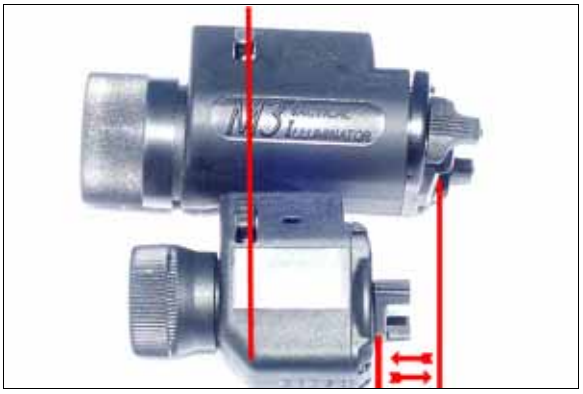
Surefire

Springfield Armory

Glock

Laser Devices

Replacing the locking bar is simple. On Streamlight models, a flat spring is depressed with the thumb, the old bar removed, and the new metal bar installed. On Glock and Springfield Armory models, coil springs are similarly depressed. On Laser Devices models, four screws are removed to replace the locking bar. On Surefire models, one pin is pushed out, the old locking bar removed, the new locking bar inserted, and the screw pins adjusted with an enclosed Allen wrench. Any user can replace the locking bars in a matter of moments.



The Springfield Armory XML is considerably smaller than other tactical light models. Because of its shorter length, it will not bottom out on a “standard” length mount, and is subject to being forced to the rear during recoil, and so damaged.


For example, the XML is clearly not intended for the Glock mounting system. To securely mount the XML to a rail, a small adapter is required. The adapter is simply secured through a small hole in the rear block, and places the rear recoil spring plug in the proper position for the XML.

C. Adjustable Contact Screws

It is important that no excessive side pressure be placed against a barrel or magazine tube, so each barrel mounted *LightLink* rail carries adjustable contact screws. These screws are adjusted from the bottom of the rail to almost (but not quite) contact the barrel or magazine extension, serving two critical protection functions.

First, in the event of an impact on the rail, leverage could damage the barrel, magazine tube, or the *LightLink* mount. Instead, the adjusting screws eliminate all impact leverage by creating multiple contact points. Second, leverage from heavy recoil forces can cause the same damage, but the possibility is eliminated through the same multiple contact points. Adjusting screws are made of flexible nylon, and those for heavy recoiling weapons are rubber tipped.

## 16. Quality

Other mounting systems simply can not compare with *LightLink* for quality. Many are often made of plastic, and some have developed a bad reputation within the industry for breaking.

All *LightLink* products are all made from light, high quality metals, heat treated where required, carefully C.N.C. machined to exacting specifications. The *LightLink* rail captures a tactical light under spring pressure with a “click” that is more felt than heard.

Similar to shutting the door on a safe, or snapping the action closed on a high quality double barreled shotgun, the *LightLink* user hears/feels a quiet little click when mounting a light, and all movement stops in that instant. The “quality click”, and the lack of movement, is proof that the light or accessory is locked in place and ready to use.

Attention to materials and detail has led to a product that is simply stronger and more durable that anything else on the market. *LightLink* products have been tested beyond any normal duty life, without failure. As previously mentioned, a single Streamlight M3 light survived over 200 test rounds of 12 gauge 3 inch magnum 00 buckshot without a single broken bulb, battery casing, or light structure. In a normal duty life, no light is likely to ever see the recoil forces generated by 200 rounds of buckshot.

## 17. OTHER PRODUCTS

– ***Belt Clips.*** The *LightLink* product line continues to develop as a full-service line of tactical lighting products. Belt clips for tactical lights, permitting the user to simply snap the tactical light on and off a belt mount - in the same fashion as a weapon mount - will be available.

Belt clips systems are accompanied by a combination magazine pouch/tactical light mount, is available for most common magazine sizes. Military/law enforcement models intended to fit duty belts are also available.

The rail and stop plate are configured to fit Streamlight, Glock, Springfield Armory,

Laser Devices, and Surefire lights. The stop plate is designed to prevent accidental activation of the light switch on most tactical light models.

***– Pistol Light Rails***. For pistols which do not bear a light-mounting rail, the *LightLink* product line includes the smallest and most versatile tactical light adapter on the market. Available in either matte silver or matte black, the *LightLink* pistol adapter can quickly be mounted by any gunsmith to any 1911 style pistol, military issue Beretta Model 92, or any other pistol using a .750" wide, radiused, non-tapered dust cover. Unlike other proprietary adapters, the *LightLink* adapter will accept almost any tactical light, including the Streamlight M3, Glock, Laser Devices, Surefire Millennium (requires a different locking bar), and the miniature XML light by Springfield Armory.

Matte Silver Rail On Colt Series 80 1911A1

Matte Black Rail On Beretta 92F

M3, Glock, etc. Lights Lock In Front Slot

Springfield Armory XML Locks In Rear Slot

Laser Devices Light on 1911A1

Glock Light On 1911A1

In addition, the *LightLink* adapter is so small that it will not interfere with holster use in most military/tactical holsters. If the weapon is to be used in a molded leather holster, simple re-molding of the leather will suffice.

***-- Dual Purpose Flashlight/Tactical Light.*** The *LightLink* line of products also will soon include a proprietary tactical light. Intended as the first true "dual role" light, the **LBL** will provide the traditional "in-line" design preferred for general use and function as a true flashlight. Light output from the 9 volt halogen bulb & lithium battery system will exceed 100 lumens with extended run time. Construction is of sturdy light-weight aircraft grade heat treated aluminum. The **LBL** is sealed and water-proofed to common depths. Unlike many general flashlights, the **LBL** light is not round, and will

not roll off when placed on an uneven surface. The **LBL** fits the hand easily, and has a mounting dovetail built into the light, allowing use in a second role as a true detachable tactical light. With on/off/momentary end cap switching, popular in both flashlights and tactical lights, it will function as both a true flashlight as well as a true detachable tactical light -- with more light output than most other tactical lights.

With gripping serrations on the body and a tool-less locking bar system, the **LBL** can be instantly mounted and dismounted from any weapon bearing a common Picatinny rail mounting system, even in the dark. The **LBL** is simply snapped on or off the weapon and, when used with *LightLink* weapon mounts, the end cap is perfectly positioned for use. While the **LBL** was designed with substantial internal recoil protection features, when combined with *LightLink* weapon mounts, with additional internal recoil protection, the **LBL** is almost indestructible under the heaviest recoil.

## 18. SUMMARY

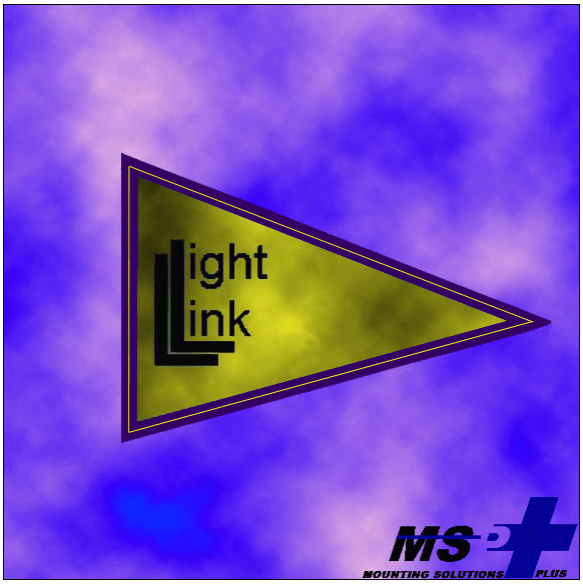
*LightLink's One-Light System* is the perfect addition to the tactical lighting field, being more flexible and providing a greater number of mounting choices and uses than any other system. *LightLink* is the ***only*** product that provides recoil protection ***within*** the mounting system. Finally, with a single tactical light now being available for use in multiple roles, *LightLink* provides a substantial dollar savings for the user.

Rather than spend over $1,000 for rifle, shotgun, and handgun tactical lights, a flashlight, and a search light, the user can simply buy one detachable tactical light (about $150 retail) and the *LightLink* mounts (most under $100 retail). In other

words, the users with available funding can use one light and have the same tactical lighting capabilities for less than half of what would otherwise be spent - freeing the budget for other uses. Users with limited funds can expand their tactical lighting capabilities to the fullest extent possible without breaking a limited budget.

Similar but cheaper products are available, but none provide *LightLink's* degree of flexibility, and none are built to *LightLink's* quality standards. You get what you pay for, and cheaper products are just that - cheap. And in the final analysis, nobody wants to be placed in harm's way when using a "cheaper" plastic tactical lighting system, if they can instead rely on a quality built tactical lighting system, and the extra degree of potentially life saving recoil protection, found ***ONLY*** in:

# LIGHTLINK'S ONE-LIGHT SYSTEM



# LIGHTLINK'S
# ONE-LIGHT SYSTEM

*and related products are available from:*


Mounting Solutions Plus
P.O. Box 971202
Miami, Florida 33197

**Phone:**

1-800-428-9394

or

(305) 253-8393

**Fax:**

(305) 232-1247

www.mountsplus.com

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R7