POST CLICK DESIGN
RESPONSE DESIGN FOR SMALL BLAST EXPLOSION INJURIES.
POST CLICK DESIGN

Essential life saving medical resources for those injured by landmines and small blast munitions.
## Executive Summary

### Inspiration

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Teams of engineers, inventors, designers, governments are innovating new and better ways of finding the millions of unexploded ordinances (uxo’s) scattered worldwide. And yet...

What resources are available to those still being injured by landmines in that time?

With all the innovative attention on detection, those who slip between the cracks are not under served, they are unserved. And 50% of those who do encounter these mines die due to a complete lack of basic resources.

Stopping blood loss, curbing infection, treating shock happen in minutes on the battlefield where medics are present. In heavily mined areas it may take 2 hours to 2 day to receive proper treatment due to the remote locations where they are found. That time-frame may be the difference between life and death.

This is my design opportunity.
It’s hot out.

Dogs barking somewhere far away; the steady thud of shovels hitting hard dirt and men talking some, spitting and laughing occasionally. Regular sounds here. Thud, scrape, bark, bark.

Inching forward on the edge of the field, hour after hour. Day after day. Until one wrong step...

Looking down at a bright red stump on the end of his left leg, the filth and disbelief. Mud everywhere, blood everywhere. Total silence but crushing panic and shock and utter urgency.

The unmet need.
(Here, specifically)
Simple house, as complete as it needs to be.

Papa Estanis and Mama Tua lounging in the heat, post dinner.

Brothers, coconuts and some whale bones.

Next door neighbor at home.
Asia Pacific was a hot spot during World War II and there were many reminders of it’s lasting impact on the islands.

The topic of my thesis project is an extension of my experience living and learning in this part of the world as well as my desire to create designs that make a positive impact on the people interacting with them.
Japanese tank remnants, Satawan Island, Chuuk State, FSM
RESEARCH SUMMERY

CONTACT + BACKGROUND

Who
Joshua Silver

RELEVANCE
Adaptive Eyewear
Design background

CONTACT + BACKGROUND

QUESTIONS + ANSWERS

How did this project begin?
I had recently spoken with...

My topic deals with directly affected by war and other...do you have any countries?

He spoke directly with who asked...
Past conflicts lead to millions of small blast explosives to be put in or on the ground in many parts of the world. The military forces responsible have long since left and the people now living among these dangerous objects do not have the resources to deal with injuries great or small.

A product that provides an onsite response to the injury can greatly reduce the likelihood of death or severe impairment due to poor or no treatment prior to the often long trip to the hospital.
I found this project one day while searching current events in South East Asia. It struck me that many countries in the world are still dealing with landmines after so many years. Not only are there many mines and Unexploded Ordinances (UXO’s) leftover from past conflicts but many more are placed in the ground each year.

It wasn’t until I dug deeper that I realized how far reaching this situation really was.
110 MILLION

anti-personnel landmines in the ground worldwide
Landmines were made for the battle field to draw resources [medics] to the injured soldier costing the ‘enemy’ army time, money and energy.

Injured soldiers were treated immediately.
Today landmines injure farmers and people living in very rural areas in many developing countries.

Even small blast mines meant to simply injure a soldier can kill someone who has no access to basic medical resources.
Often all that they have with them at the time of the injury are the tool they are using to work the land.
The majority of uncleared mines are in very rural locations where poor farmers often live. Even small injuries are dangerous due to the length of time it takes to reach city centers where medical facilities are located.
Major International Organizations Involved

HALO Trust
Specializes in the removal of the hazardous debris of war and has over 8,000 full-time staff in 13 countries, with ongoing surveys into new regions.
(Key: Detection and “on-ground” insight)

American/International Red Cross
The American Red Cross works with the global Red Cross to address the needs of the world’s most vulnerable communities.
(Key: Medical insights/hand’s on experience)

Landmine and Cluster Munition Monitor (the Monitor)
Provides “civil society” monitoring on the humanitarian and developmental consequences of landmines, cluster munitions, and explosive remnants of war.
(Key: Data/obscure rural insights)

Detection methods

Ground Probe [stick/non tech tool]: dangerous, common in low income areas
Dog: effective but often too heavy and can cause explosion

GMO Mine Detecting Plants: innovative concept, not hardy enough to survive
Ground Penetrating Radar: very expensive, expert operation, high energy use

Metal Detector: reliable but very slow and ineffective on plastic apms. Most common method of APM detection.
While detection is undoubtedly essential, the length of time it takes to find mines leaves much opportunity for people to become injured by them.

The lack of resources available to those injured are few to none.
A mine costs $3-$10 to lay and $330-$930 to find. At the current rate of clearance, it is estimated by the UN that it will take 600+ years to clear them all, if no more are laid in that time.

Landmine detector, Mariam Zaire Amar   photo: Andrew McConnell

Female deminer, Angola
More than 60 percent of victims are farmers. They can’t work a field if it’s mined, can’t earn an income, and can’t feed their families.

National Geographic, Jan 2012
Males are more often outside doing manual labor such as farming or hauling and therefore are more likely to be injured by an APL. *87% of those injured are males with an average age of 28.

One-third of injury and death are kids and almost all of those are boys as well as they are more apt to dig, find and play with explosives.

*the monitor, 2011
Sar, 28

“I was looking for tree bark that we use for a traditional typhoid medicine when I stepped on a landmine, just a couple of minutes walk from my house”.

He was aware of landmines in the area but went off the ‘safe’ trail to gather traditional medicine where he was injured.

Several years ago he and his family relocated to this area in Northern Cambodia due to severe poverty. The land is very fertile but riddled with landmines which made it cheap. He and many neighbors feel forced to take the risk to farm these areas to earn money for their family.

Chea was forced to live and farm mined land due to extreme poverty. Even in places where there are known mines, people must still work the land or they face starvation. Though he had many tools on his farm, none of them were assistance to him when he was injured. Improvised medical treatment was administered by neighbors who came to his rescue when they heard the blast of the mine.
“Since I do not have a job then, I often go to the mountains near our house to collect plants and vegetables which I could sell.”

One day Edris and his friend were returning from collecting vegetables, walking barefoot on the main trail that led back to the village. They were telling stories and joking around when suddenly there was a loud explosion. His friend had stepped on a small mine and they both fell to the ground immediately.

His friend was laying in shock and missing both his legs and bleeding profusely. Edris got up and ran down the trail to get help. Some villagers came and carried the boy to the main village. The villagers eventually got the boy to an International Red Cross medical station but it was too late. He had lost too much blood since the accident.

There was no treatment options for Edris’ friend at the site of the accident and he bled to death. There is no 911, no ambulance and no quick response.
In September 2012, Pia Agti left her farm in Chukudom, Budi and walked with 2 of her friends out into the nearby countryside to pick mangoes. Pia brought tools to transplant young mango trees after she picked the fruit from the mature trees. On the way home Pia walked ahead of her friends, leading the way.

She stepped on a landmine.

Villagers carried her unconscious body on a makeshift stretcher for 12 miles. Pia almost did not survive the trip.

Long travel times to medical facilities is common in high mine areas as they tend to be in rural areas. Pia needed things during those 2 hours that she did not have and she almost died because of it. Arriving at the hospital near death took a tremendous amount of hospital resources: time, energy, equipment and money.
UXO’S
Unexploded Ordnance (UXO) are explosive weapons (bombs, cluster munitions, shells/ artillery projectiles, grenades, missiles, etc.) that did not explode when they were fired or dropped and still pose a risk of detonation, even many decades after they were used or discarded.

magamerica.org, 2013

There are many types of UXO’s of different size and damage intent.

Antipersonnel mines APM’s are designed to maim not kill. There are millions of these mines worldwide and they are the focus of my design response goal.
Apm’s lie under or on the surface of the ground and can be activated by as little as 20-30 pounds, trip wire or even proximity.

Apm’s are made of plastic, metal or other materials and contain explosives and sometimes shrapnel. They obviously take the most toll on lower limbs that step on them but they can also cause blindness, severe burns or reproductive injuries.

What happens after the mine is stepped on, clicks, then explodes...is universal. Limbs are lost and lives are often ruined.
More than *5,000 landmine victims are reported each year*. The actual number is without a doubt higher as many injuries occur in rural areas or are simply not documented.

There are an estimated 532,000 living landmine victims worldwide. The vast majority of them live in developing countries with few resources. Injury from a landmine is at a minimum loss of the foot and shin of the leg that stepped on the mine.

*halo trust international, 2012*
They are in **68 developing countries** that often do not have access to reliable transportation services, adequate health care or emergency response services.

-United Explanations, 2011
Every 20 minutes someone steps on a landmine

-mineseeker operations, 2012
Through a number of interviews, surveys and further research I was able to glean a deeper understanding of what happens not only to APM victims but also other high trauma injury victims, various-cause amputees and a variety of professionals of relevant fields.

I focused on three major groups to target:

**Amputees** to gain access into the multi-faceted struggles of this unique disability and also to hear first hand about resources that work or do not work.

**Mine professionals** to learn about those on the ground lifting mines, about funds and fund raising, technology and access to specific in country data/stories.

**Medical professionals** both in developed and developing countries to explore the medical side of such a destructive injury. What treatments are available and what post care options are needed and what is most often administered.
Stop bleeding
Ask questions/check if conscious
Give Oxygen

REOCCURRENCE CHALLENGES

- finding employment
- pain: phantom/stump
- loss of old activities
- mobility

Facebook was a valuable resource for humanitarian/medical insights
One of my challenges with this project was contacting my user group for feedback. I created a data gathering pack to send to families that live on mined land in Laos.

A connection I made during my research phase administered the packs and mailed them back to me.

The result was direct contact with my user group including a questionnaire, feedback on my concepts and pictures of their everyday lives.

The value of this ended up being very unexpected. While I did not get the high value data I was looking for, I did get some very simple and honest pictures and responses that reminded me why I am doing this project. This stayed with me throughout the most challenging aspects of this project and helped me to find ways to move forward despite these challenges.
The key results of my investigation and research created a framework in which to begin my design concepts.

It became evident that an *onsite response system* needed to be included in the design, though I was not quite sure how it would manifest. The very rural locations of these mines necessitated an immediate response as the severity of an injury is greatly extended the longer the person goes without treatment.

The majority of people injured are *manual laborers and most often farmers*. The response system must be onsite with the users to be effective.
Care/data gathering pack materials for Laotian families
If a design can respond immediately to a severe blast injury, the likelihood of survival increases dramatically.

Secondary benefits include a higher likelihood of a successful treatment once arrived at medical facility, less costly treatment due to patient in ‘better condition’ than if no treatment were administered and a baseline level of medical response education for communities affected by UXO’s.
This is the intent of Post Click Design.
## Product Requirements

### Usability
- use while on the ground
- no reading needed
- use in wet/water/blood
- intuitive
- simple

### Physical Requirements
- adaptable to many conditions
- inexpensive
- easy to manufacture
- simple to use
- little maintenance
- well made, very sturdy
- impeccably effective

### Functional Requirements
- stop bleeding
- prevent infection
- increase comfort if possible
- used by injured person
- used by low trained person
- able to be with person at all times
Performance Requirements
use when wet
easy to use in high stress situations
possibly use by highly injured person
highly effective/low maintenance
attract funding attention
ignite creative minds to engage issue
quick and simple performance

Regulations
no electricity needed
high operation flexibility
long expiration dates on contents
no special temperatures needed
affordable to user/aid agency
be compatible with mine agency guidelines
be compatible with safely regulations
Activities to consider for ergonomic study:

digging
poking
scraping
lifting
walking with product
reaching with product
carrying product
lying positions
standing positions
crouching positions

Other considerations
average size differences
internationally
one handed use
Design Process
15’

Blast radius of the common M14 mine
Initially I looked at injury reduction as a primary feature of my design.

The small blast radius of many mines led to a desire to try and protect the user as a primary function of my product and response treatment as a secondary element.

Below are examples from my path in this direction...
IDEATION MOCKUPS

First prototype, 27 gauge steel sheet

First round testing
Second completed mockup. Full scale/material blast reduction tool.

14 gauge steel

1 piece shield and blade
Sample of second round testing, functional mockup
FINAL DIRECTION?
Medical Kit
Streamlined integration into the tool with minimal interference while working. Hollow shaft leveraged to store medical supplies.

Fiberglass Shaft
Lightweight, hollow and strong. The perfect shaft for this application.

Step Plate
Protect toes and allow for easier leverage while digging.

Blast Barrier
Maximum protection, with minimal disruption. Lightweight steel with cutout for blast fabric insert.
The Medical Kit component at this stage was viewed as a secondary addition to the blast reduction tool. To develop the contents of the kit I spoke with medical professionals from demining organizations such as HALO Trust as well as medics from the Red Cross and online Facebook groups.
Medical Kit, exploded view and content package

Recycled rubber molded half round plug (permanent plug/adhesive)

Custom rubber plug, .05 pp

Thin thermal Mylar for shock treatment (PET stranded poly film.
100x 300 cm: .0 .30 pp

Flexible airway tube if victim goes into shock.
LDPE Material
90 mm, .11 - .18 pp

Mini Marker for tourniquet time/size round
1 gram, 13x13x17 mm EW, .02 pp

Synthetic rubber tourniquet 4x70” for blood loss
1.34 20° standard .07 pp [no wholesale]

Latex fine sterile gloves for reduction of infection
Viny1 pc, use size: 100 in a box, 10 boxes to case
1 ser $10.15
In theory ‘Thesis Design’ nets a final design direction in which to ‘Implement’ the following semester. In my case, it became apparent that in order to produce a meaningful project and useful product, I needed to meet the people who would be using my product.

And so in the winter of 2013 I went to South East Asia to find my users and test my concepts in the context of their reality.
Making concrete plans for Cambodia was tough. People and organizations were challenging to contact and making appointment while so far away in California, was not possible.

I did have a few contacts that I made during the research phase of this project and I sought them out once I got to Cambodia. They led to other contacts and quickly my trip became very fruitful.
There were some people I met that went beyond what is expected and helped me by leaps and bounds. Bill Morse is one of them.

The major insights gleaned from our conversations.

- **Basic training must be part of the system**
- People are aware of mine, they are knowledgeable about them
- **Most people have cell phones**, RFID is not necessary
- EOD local bomb squads would be good vehicle to deliver tools and training
- **Farmers can and do sign agreements to lease/use tools or other resources.** “You break or lose, you buy. You open, you buy”, etc.
- **Charge farmers something** or they may not value what they get.
- When tourism goes down, Cambodians farm on mined land to survive (so ‘need’ fluctuates)
- USA provides 30% of mine financial aid
- **496 million per year**, spend mostly on clearance
- Cambodia has around 5 million landmines and 2.5 million UXO’s
- US military could play role in delivery and/or education
- **The medical kit part is essential.** Villages may have basic kits but they are most often empty, never restocked.

I followed up on many of Bill’s insights which helped guide my project both in and outside of Cambodia.
**Connections**

**More Than Interviews**

**Bao Ka**, Owner of Guesthouse, farmer and former mine clearance worker.

I met Bao immediately on arrival in Siam Reap and he gave me **insights into farming, tools and Cambodian culture and customs.**

How farmers work (in small groups, or solo on personal land). Where they work (shared plots or individual plots). The tools the most often use (shovels, hoes).

Feedback on prototype is that the **barrier is a hindrance but the medical equipment is much needed.** He also mentioned **how important quality tools are to farmers**; very valued.

**Henry.** My tuk tuk driver and translator for a few days, former farmer on mined and unmined land.

Insights on farming practices, tools used and digging techniques. He also told me that often **farmers ‘dig shallow’ to avoid a top down hit on a mine. This means the barrier design is very much in the way for shallow digging.**
Ly Kim Heng. Medical technician at International Red Cross in Siem Reap and former mine clearance group manager.

He spoke no english but through a series of hand gestures and photographs he guided me to what resources are necessary for first response medical supplies.

He got out his medical kit and we went over the most important supplies.

Keo Ratha, Manager at Handicapped International

Keo was very shy and had no direct [useful] feedback on my concepts. He did however lead me to several other fantastic resources such as the local HALO Trust as well as the Red Cross contacts above. He was well connected and knew a lot about the mine situation in Cambodia.
Adam Jasinski did not care much for my presentation...
It was not until I spoke with program manager Adam Jasinski of HALO Trust that I received the most useful suggestions of my trip so far. It was actually more of a demand. "If you really give a shit about what you’re doing, go to a village that has mines and stay there. Meet people, talk to them and watch them. Don’t be a fucking tourist, be a part of it for as long as you can.” We then went to a wall with a huge map on it and he pointed out a border village called Anlong Veng. He said, “this is what you are looking for”. The next morning I left for the village.
ON THE ROAD TO

ANLONG VENG
Road to my host village in northern Cambodia
I spend a day with local farmers from a village in Anlong Veng, just steps from the Thai border. My driver spoke enough English to translate and we sat, and chatted, and did nothing. It was a short amount of time but I saw the land that they live and work on, the tools they use, the way they use the tools and insights into their way of life.
As expected, they did not live in fear due to the mines on their land. They didn’t even think about it much. Accidents happened rarely but when they did happen there was indeed no resources. It took me 45 minutes on a bumpy dirt path to get to the village and if you are bleeding from an injury it will take 45 back into town to be treated.

The tools used on the farm. Mostly handmade shafts and forged iron blades for shovels and hoes. The diameter of the tools were greater than the comfortable 1-2” for tools we are used to and the weight was much greater.

Quality tools with modern materials are in themselves a greatly valued resource.
I treated this experience as an opportunity to take part, in whatever small way I could, in the everyday life of a farmer living on what we consider dangerous land.

We spoke of my project, of their lives and for a long time spoke of nothing.

Eventually I was politely asked through a translator if, now that I got what I wanted, would I buy a $2 bottle of local coconut wine for us to share. I did and we sat for hours drinking and laughing and not really knowing what each other was saying...
Farm land in my host village, Anlong Veng
REVISED DIRECTION
Medical Kit
The most useful and needed resource of my design. This became my priority design goal over blast reduction. The need for immediate medical response is great, real and the opportunity is clear.

While blast reduction is still a useful goal, I found there were too many factors (mine size, tools used, scenarios when injured) to design a reasonable response.

It now became my goal, how to design the most user friendly, intuitive and effective response to the given challenge.
Aesthetic

Trusted
Smooth
Solid
Honest

Function

Must be ergonomic as a tool
Provide near instant medical response
Simple to use
Tool first, Kit second
Make the opening system simple yet hard to open accidentally while using tool.
Make system flexible so kit may be reloaded or loaded with various types of supplies.
Simple to no maintenance

Distribution

Target market
Manual laborers
Male average age of 28 (family providers)
Rural locations, farms/homes, etc.

Cost
$50-80 per complete tool
Minimize cost for humanitarian funding
User will pay small fee for tool; $5-$10
<table>
<thead>
<tr>
<th>TASK</th>
<th>POTENTIAL ISSUE</th>
<th>DESIGN CONSIDERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Getting/qualifying for the tool. • Unclear where, who, how. • Empty stock in local distribution center.</td>
<td>• Local NGO’s and similar groups to org • Village share eco system (already exists)</td>
</tr>
<tr>
<td>2</td>
<td>Walking to work/farm • Forgetting the tool • Too much to carry</td>
<td>• Reminder system? Bracelet that matches color of tool parts/highlights • Strap system or other assistance? Or, that’s not my problem (this replaces a tool, not adds another tool)</td>
</tr>
<tr>
<td>3</td>
<td>Using the tool! • Blade is loose and wobbly when used • Tool is lost/misplaced/broken • Kit is accidentally opened</td>
<td>• Joint needs to be tight and strong • Loan the tool. • Lease, signed with terms (exists already) • Have backup/secondary function to prevent accidental opening</td>
</tr>
<tr>
<td>4</td>
<td>After the blast... • Victim unconcious • Victim is alone • Tool is damaged</td>
<td>• Alert responders nearby (blast does this) • Alert responder. Tool should be able to be used by single person, while very injured. • Protect medical kit contents</td>
</tr>
<tr>
<td>5</td>
<td>Opening the kit • Victim has only 1 hand • Responder is untrained • Kit stuck inside</td>
<td>• 1 hand operation • Education for target village, work with existing structures. Simple color/number... • Back up access, simple, strong, easy</td>
</tr>
<tr>
<td>6</td>
<td>Using the kit • No training • 1 handed • Supplies get filthy</td>
<td>• Obvious, intuitive, simple. Education... • 1 hand usage • Sterile packaging, vaccuum packaging</td>
</tr>
</tbody>
</table>
High trauma kit contents
How to access kit

How it’s attached to the functional tool, shovel, etc.

Form, ergonomics
CONCEPT SKETCHES

Written guidelines. 'Walk-through' of scenario, to help spark ideas...

Snap fit, not secure enough

Metal wrap, heavy, cumbersome

Twist with peel label

Rip cord access, easy to accidentally open
Threads, too easy to open while working

Twist cap, not bad, snag potential

Pull tab, interesting but impractical
Too short/nubby

Too many cuts, unnecessary

Explore shape
Interesting shape, still ergonomic

Interesting shape, ergonomic?
Smaller latch, more ergonomic
More streamlined form, ergonomic

Latch access, strong, simple

Top comes off with latch
Too complicated

Kit attached to cap, good

Too intrusive

Medi kit Graphics
Medical cross icon for recognition

Kit content ideation

Over designed
KEY FEATURES

Cross Icon
Easy, worldwide recognition

Top Detaches
Easy, quick access to kit

Streamlined Form
Ergonomic and familiar

Latch Access
Simple, Strong

Sleeve
For kit contents, attached to cap for easy access
3D Printed Prototype, printed and tested
FORM NOTES
**Top cap**
- too wide, too long
- wasted space/material

**Ridges**
- not ergonomic
- uncomfortable when digging

**Hinge gap**
- too deep/wide
- holds dirt/water

**Latch**
- too pronounced/too big
- too attention getting (will want to open)
I had the incredible luck of finding a military combat medic online in the Bay Area that agreed to meet with me to validate my medical response treatment and medical kit contents for my project.

He was a career combat medic with direct experience treating UXO/IED blast injuries and amputations.

His feedback greatly enhanced the validity of my research and helped turned assumptions based on research into a solid, factual medical response design.

**After this meeting and many talks/tests later the final kit contents:**

1. **Tourniquet** - to cut blood loss
2. **Povidone** - military antibiotic
3. **Impregnated Bandage** - blood clotting
4. **Gauze** - wrap and cover the above
Medical supply collection and notes

Military medic supply packaging

Supply testing and proper application

Medical supply collection and notes
Packaging Testing, for minimal space use.

Medical kit dimensions, quantity, and performance testing.

Vacuum seal kit ‘pods’ and sleeve packaging testing.
Medical Kit Graphics
Simple, clear colors that match the 'how-to' graphics, creating a seamless and intuitive user experience in what will be a highly stressful, chaotic experience.

MicroPOD Packaging
Printed vinyl. Vacuum sealed. 4x2”

POD Sleeve Stickers
Printed vinyl stickers. Inner sleeve placement. 4x1.5”
FINAL DESIGN
Streamlined Lever
Simple to open when needed
Completely unobtrusive while using tool
Greatly limits accidental opening

Minimal Fingertip Access
Snag-free, ergonomic entry
As much as needed, as little as possible
Greatly limits accidental opening
Medical Kit Sleeve

Strong and rigid
Provides stability between parts
Attached to top for 1 part removal

Sleeve Plug

Holds kit pods in place
Snag free design
**Medical Cross**

- Instant recognition icon
- Red contrast for visibility
- Subtle reminder, awareness

**Backside Logo**

- Minimal but noticeable
- Seen but not felt
- Simple branding, unobtrusive
BILL OF MATERIALS
<table>
<thead>
<tr>
<th>Part</th>
<th>Material</th>
<th>Process</th>
<th>Cost/USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit Top</td>
<td>PP/Glass Fiber</td>
<td>Injection Mold</td>
<td>.90</td>
</tr>
<tr>
<td>Pin</td>
<td>Steel</td>
<td>Sourced</td>
<td>.03</td>
</tr>
<tr>
<td>O-Ring</td>
<td>Silicon Rubber</td>
<td>Sourced</td>
<td>.001 for 10</td>
</tr>
<tr>
<td>Latch</td>
<td>PP/Glass Fiber</td>
<td>Injection Mold</td>
<td>.40</td>
</tr>
<tr>
<td>Kit Bottom</td>
<td>PP/Glass Fiber</td>
<td>Injection Mold</td>
<td>2.40</td>
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<tr>
<td>Sleeve</td>
<td>PP/Glass Fiber</td>
<td>Injection Mold</td>
<td>.70</td>
</tr>
<tr>
<td>Plug</td>
<td>ABS</td>
<td>Injection Mold</td>
<td>.04</td>
</tr>
</tbody>
</table>
While this project focused on UXO response mainly in South East Asia, the concept applies to a variety of locations and situations, not only for UXO response but for any activity that requires onsite medical resources.

The contents of the kit can easily be repackaged based on activity and of course the color variations are endless to match any need.
Construction

Snow Industry

Boating

Firefighting
STAKEHOLDERS

Social/Humanitarian Designers
Paul Polack, Founder of Design Revolution
John Bielenberg, Founder Future Design
Ryan Duke, TinyGOOD
Emily Pilloton, Studio H
Dave Yale, Freelance Designer, Bay Area
David Reside Peace Corps Director
Rachael Nash, Non-profit professional
Hoeurn Somnieng, Monk/Adoption Agency
Matt Miller, Project Manager Studio H
Alex Steffen, Worldchanging

Daniel Ramirez, Social Designer, Colombia
Cameron Sinclair, Architecture for Humanity
Amy Novogratz, TED
Alex Gilliam, Public Workshop
Yawning Alexa Kramer,
Frog Design
John Waley, D2M
**Social Design Firms**
Lifestraw, Vestergaard Franden
Adaptive Eyewear, Josh Silver
Jaiper Foot, prosthetics
D-Lab, Bay Area Design Group
Design that Matters, Kickapoo
Ewing Design Group, Tourniquets
Mike Grave Design, Medical Devices
OXO, Good Grips
Liza Forester Designs, DIY Soccer Balls
Future Farmers
Design Revolution
IDEO.org, Bay Area Design
Hippo Roller, Johan Jonker

**Humanitarian Assistance, other**
Rachel Faller, Business owner, Cambodia
MICMAC, Columbian Victim Assistance
National Mine Access Center, Columbia
HALO Trust, Demining Org
Watthan Artisans, Cambodian Amputee Crafts
DHL, FED EX. Rural shipping
Mine Action Group, Data, Story Resource
Landmine Monitor, Data/Records
MAG International, Data
Kiva, Bay Area Microloans
UN, Grant Source, Data
EU, Grant Source
Aussie Aid, Australian Grant Source
RESOURCES

Websites (www.)
halotrust.org
jaipurfoot.org
un.org
copelaos.org
landminemonitor.org
peacecorps.gov
kiva.org
gizmodo.com
youtube: various material, medical, amputee videos
surveymonkey.com
d-rev.org
handicap-international.us
hcdconnect.org, ideo social design branch

Groups/Organizations
Facebook: EMT Groups, Peace Corps Cambodia, Amputee Coalition of America, Lend Your Leg
Stump’s R Us, Bay Area Amputee Org
Clearpath International Org, detection assistance
Cambodian Community Development Inc., Bay Area Cambodians
COPE, victim assistance, Laos
HALO Trust, international detection agency

Journals
Landmine and Cluster Munition Monitor. Landmine Monitor: Country Profile Reports. 2010-2012

Events
TinyGOOD design meeting, humanitarian design team in Bay Area
Kiva Conference, local micro-loan organization
Peace Corps Conference, international volunteer organization
Cambodian New Year’s Festival, Bay Area
CompostModern Conference, high action/good cause
International Landmine Awareness Day, Bay Area
Cool Products Expo, new tech/design, Stanford