



**American  
Red Cross**

## **American Red Cross Gold Country Region**

### **Disaster Messaging When the Phones Go Out**

#### **Nature of Red Cross Disaster Message Traffic**

During “blue skies” (every day, non-disaster periods), Red Cross staff and volunteers – like everyone else – depend on dial-up and/or cellular telephone networks and on the Internet. This dependency spills over during “gray skies” during disaster responses, frequently suffering communications “black outs.”

#### **The Communications Problem**

The Red Cross has an over-dependency on cell phones and the Internet for handling disaster messages. With disruption of dial-up and cellular telephone and Internet service, communications problems *frequently* manifest early in a disaster response at service sites (shelters). The communications problem is exacerbated by the latency in a DST response and/or cell provider response to restore a minimal level of the former everyday telecommunications capabilities.

#### **The Current Solution**

Ham radio operators are commonly called upon to support the Red Cross for passing messages. Typically messages that hams pass begin with a Red Crosser composing a message either verbally with the operator writing it down or writing it down him or herself and giving it to the ham radio operator. Hams then interpret and pass a hand-written message (their writing or the Red Crosser’s). “Message hand-off” creates the very serious risk of transcription error (i.e., message corruption) because Red Cross messages can be lengthy creating a situation much like the children’s game of “telephone.”

*But*, ham radio operators most typically prefer to use voice to handle Red Cross message traffic. Though there is movement within the ham disaster response community (“ARES”) to pass lengthy messages digitally (notably by the email-like client software *Winlink*, a radio utility). However, with the ham radio operator keyboarding the Red Crosser’s message into Winlink (or other digital radio utility), the risk of transcription error is only slightly mitigated.

#### **Compounding the Problem with Partial Solutions**

Though it offers a more robust and error free modality, passing a lengthy message (10 or more words plus sender, receiver, and tracking information) digitally is not without its problems – problems that can be mitigated by minimizing the number of hands transcribing the message. Expecting the ham operator to keyboard a message into a digital radio client, such as Winlink or others, is a minimal nod to problem mitigation. Further, Winlink and the other digital client software *intended for use by hams* is of such complexity that it discourages use by Red Crossers because of the sharp learning curves involved.

#### **What’s Needed: A Better Solution**

Red Cross volunteers have varying levels of computer skills varying from casual use (e.g., email, web surfing, etc.) to expertise as Disaster Service Technologists. Those volunteers working in

community service shelters have these skill levels and many in between. They tend to resist learning “yet another computer program.”

Going a long way to solving the problem would be a messaging tool or utility that allows the Red Crosser to compose a message on a computer (thereby mitigating the risks of transcription error) and save the message to a text file. The tool would be simple to use in a familiar computer environment and the object text file it created would be entirely agnostic to transmission medium. Critically important, the tool should also require only a bare minimum of training to learn. The tool presented below can and has been taught in ten minutes to average computers users.

What if the Red Crosser doesn't have access to a Red Cross or personal computer? Encouraging the responding ham radio community (ARES) to install the tool on their computers and making them available to the Red Crosser long enough to compose his or her message can solve that issue (as has been done in the Gold Country Region).

The tool, *flmsg<sup>i</sup>*, presents the user with three choices for the user: *Create*, *Edit*, and *View*. The utility would open a desired form in an Internet browser – an environment familiar to the user (e.g., Internet Explorer, FireFox, Chrome, etc.) where the user composes and saves the message to a very small file size. The digital message (saved to a flash drive) can be given to a radio operator to be sent to the intended recipient over digital radio.

## **Nature of Disaster Messages**

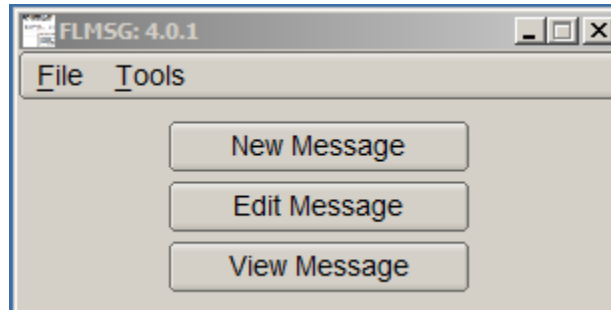
In addition to the many different messages inherent in telephone conversations between Assistant Directors, managers, supervisors, and other support personnel, typical Red Cross disaster communications handled on forms include but is not limited to:

- Status reports (addressed daily to all staff and volunteers)
- Incident Action Plans (IAPs) (addressed daily to all staff and volunteers)
- Safety Messages (addressed daily to all staff and volunteers, part of the IAP)
- Logistics Requisitions (requesting from staff/location to Logistics Group at the DOC)
- Requisitions for additional staff (requests from response entities, e.g., a shelter)
- Client injury and death reports
- Staff injury/illness reports
- Disaster Health Services statistical data
- Safe and Well registration
- Emergency welfare inquiries
- Unaccompanied minor and separated child reports

With a normally intact communications infrastructure (i.e., dial tone, cellular service, social media, and Internet email) in the area of a disaster, passing such messages is without problem. However certain message traffic *must* be passed from hour 0 to hour 96 hours of a disaster response or later regardless status of the telecom infrastructure. When the telecommunications infrastructure suffers an impact from a disaster, using digital communications over radio circuits for messages of more than a few words (status reports, long logistics lists, etc.) becomes an imperative.

## Message Utility (flmsg) Application

**flmsg** is a messaging utility that can be used *entirely* independently of the radio operator. It enables the *non-ham* Red Cross user can compose messages or complete Red Cross-proprietary forms for disaster use. The strength of the utility interface lies in its simplicity: short learning curve, ease of use, file portability, and, it can be run directly from a flash drive. As introduced above, it offers the user only three options: create, edit, and (re)view a message. This simplicity plus the familiar environment (i.e., a browser) in which the user manages his/her message, easily overcomes the Red Cross volunteer resistance of "What? I have to learn yet *another* program?" Because the interface occupies a very small space on the computer desktop, it has the added advantage of being unobtrusive.



During a telecommunications infrastructure failure that impacts disaster message traffic there remain certain messages that are urgent and cannot wait for telecommunications to be restored. The information that **must** be passed during a telecom infrastructure outage can be managed by the Red Cross General Message Form ICS213, Work Assignment ICS204 plus seven Red Cross-specific forms. Nine forms have been released as *flmsg* "custom" HTML forms (Figure 1). Selecting the form of interest opens the form in a browser where the Red Crosser can complete then save the form as a small text file.

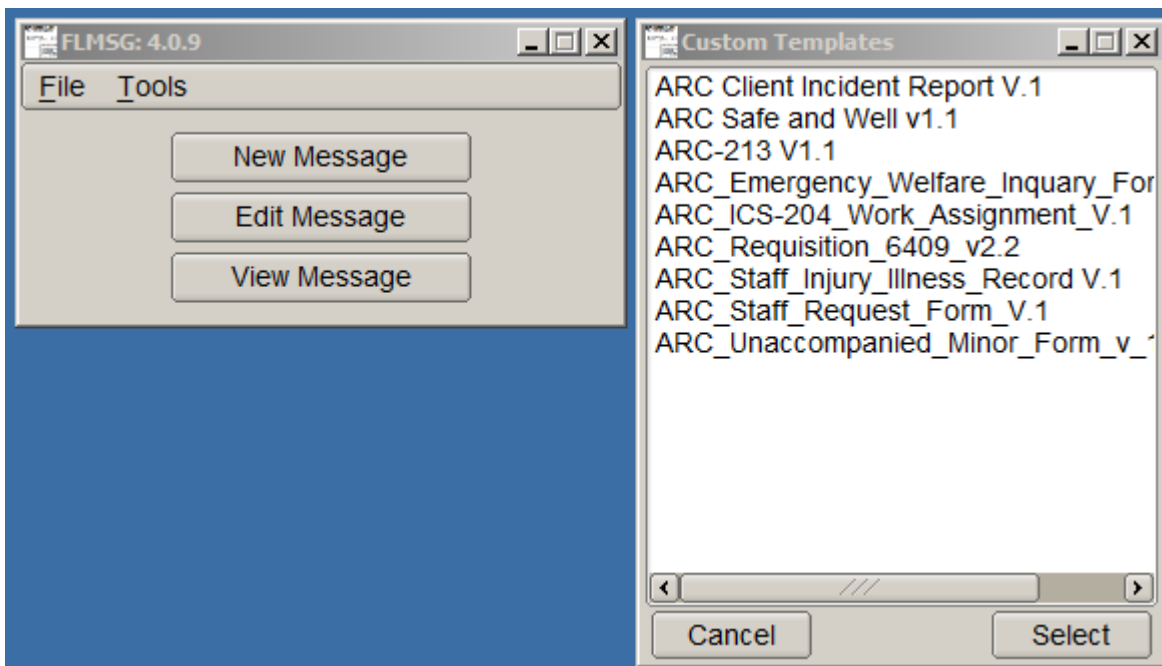


Figure 1 Template Selection Menu

Some examples of forms use follow. Noteworthy in the Red Cross General Message Form ICS 213 example is the message contains over 200 words exclusive of the header information. Handling such a message over by voice over radio would present a challenge and a high risk of transcription error.



 <b>American Red Cross</b>		<b>ARC 213 General Message</b> HTML Vers 1.1	
DR #:	<input type="text" value="117-17"/>	Incident Name:	<input type="text" value="Hurricane Matthew"/>
		Message #:	<input type="text" value="001"/>
Precedence: <input type="text" value="Routine"/> Do NOT use this form for an Emergency message!			
To (Name/Position): <input type="text" value="Rita Smith, RN CLS/HS/MN"/>			
From (Name/Position): <input type="text" value="Jim Piper, RN, DHS Supervisor Tarboro Shelter"/>			
Subject: <input type="text" value="Shelter status re medically fragile client"/> Date: <input type="text" value="10-15-16"/> Time: <input type="text" value="1100 hrs"/>			
Original Message:			
<p>Telecommunications impacted: no cell, no wired phones, no internet avail.</p> <p>Shelter pop is 75 and anticipated to increase to 150 over next 6 hours. Have assigned Joan Smith, RN to reception to screen clients s/p registration</p> <p>11 medically fragile clients with following issues:</p> <p>One fragile diabetic w/enough insulin (Humalog) to last 2 days (self care)</p> <p>Four geriatrics (2F, 1M) with mobility problems. M uses scooter and does not have battery charger. One F uses walker, other uses WC (has WC with her).</p> <p>One 32 yo F bariatric client (&gt;200kgs) w/significant mobility prob (has scooter). At risk for infection d/t reason surgery. Isolated w/husband &amp; 2 small children from main dormitory.</p> <p>One F w/ESKD. Requires dialysis 3x/week, M, W, F. Next scheduled Monday. Nearest dialysis facility in Rocky Mount, NC, 20 mi away. Transportation an issue as main highways flooded &amp; impassable..</p> <p>Remaining 4 have multiple co-morbidities and multiple medications requiring replacement ASAP. Each client evacuated from home with minimal or no RXs and no durable medical goods.</p> <p>&gt;&gt; NO Rx available here. &lt;&lt;</p> <p>Six of these clients require special needs beds. Only one bed in trailer. Need 5 more ASAP plus want 2 more for poss addit'l need. Do you want a formal req completed for them or can the beds be dispatched with paperwork to follow later?</p>			
Approved by: <input type="text" value="Jim Piper, RN"/>		Position/Title: <input type="text" value="IDC/HS/SV"/>	
Reply:			
Replied By (Names /Position): <input type="text"/>			
Replied Date &Time: <input type="text"/>			
ICS 213 General Message Form adapted For American Red Cross			Version 1.1 01/18/2017

Figure 2. Disaster Health Services Message

 **ARC Disaster Requisition - FORM 6409** HTML Vers 2.1

DR# (if applicable):  DR Name:  Date: 1-20-2017 Requisition # :

Requestor Name :  Signature:

Title :  Phone:

**Delivery Information**

Site POC Name :  Phone:  Email:

Address:

City:  State:  Zip:

**Description of product(s) and/or service(s)**

Stock No.	Quantity	Unit of measure (EA/PK/CS/BX)	Total QTY (each)	Description	Date needed
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Special Instructions :

**The following information must be filled in by the APPROVER ONLY:**

*Approval includes verification of need; need consistent with Service Delivery Plan and budget.*

Approver Name :  Signature:

Title :  Phone:

**Procurement Method (This section is optional) :**


Account string to charge:  -  -  -  -  -  -

Procurement tool to use:  Donation  ReQuest  Concur Invoice  P-card  Transfer  Loan

Other: (Explain) :

DCS JT DMWT Disaster Requisition (F609) V.2.0 2015.02.13  
 Author: DeployMaterial Workers and Technology Process  
 Owner: Disaster Cycle Services  
 [HTML V2.1 American Red Cross Gold Country Region 2017.01.18]

Figure 3 Disaster Requisition Form 6409

		<b>ARC Safe and Well Registration</b>		HTML Vers 1.1
<b>ARC Instructions for using Form</b> Use this form when there is no internet connectivity available and someone wishes to register on the Safe and Well website. Forms should be taken to the nearest location for data entry into the Safe and Well website. Treat the form as confidential information and shred it following data entry.				
<b>CLIENT INFORMATION</b>				
<b>First Name If Registering as A A./N Organization):</b> <input type="text"/>			<b>LAST NAME (or Organization) :</b> <input type="text"/>	
<b>EMAIL ADDRESS (suggested):</b> <input type="text"/>		<b>DATE of BIRTH (suggested) :</b> <input type="text"/>		
<b>PREDISASTER HOME INFORMATION</b>				
<b>PRIMARY PHONE</b> <input type="text"/>		<b>WORK PHONE (SUGGESTED)</b> <input type="text"/>	<b>OTHER PHONE (SUGGESTED) :</b> <input type="text"/>	
<b>HOME ADDRESS:</b> <input type="text"/>		<b>CITY:</b> <input type="text"/>	<b>STATE:</b> <input type="text"/>	<b>ZIP:</b> <input type="text"/>
<b>BEST CURRENT CONTACT INFORMATION</b>				
<b>HOME ADDRESS:</b> <input type="text"/>		<b>CITY:</b> <input type="text"/>	<b>STATE:</b> <input type="text"/>	<b>ZIP:</b> <input type="text"/>
<b>SAFE AND WELL MESSAGES</b> (check boxes next to appropriate messages to make your selctions)				
<input type="checkbox"/> I am safe and well <input type="checkbox"/> Family and I are safe and well <input type="checkbox"/> Currently at shelter <input type="checkbox"/> Currently at home <input type="checkbox"/> Currently at family member/friends house <input type="checkbox"/> Currently at a hotel <input type="checkbox"/> I am safe and in the process of evacuating		<input type="checkbox"/> I am evacuating to a shelter <input type="checkbox"/> I am evacuating to the house of a family member/friend <input type="checkbox"/> I have evacuated and I am safe <input type="checkbox"/> I am currently/remaining at home <input type="checkbox"/> Will make phone calls when able <input type="checkbox"/> Will email when able <input type="checkbox"/> Will mail letter/postcard when able		
<b>CUSTOM MESSAGE</b> You may add your own custom short message, up to 255 characters. Please take care that your message is appropriate for the public, and do not include names or details if doing so could be harmful to you or others.				
<input type="text"/>				
<b>FOR ARC Use Only</b>				
<b>Date and time entered:</b> <input type="text"/>		<b>DRO Number / Location:</b> <input type="text"/>	<b>Name or Enter DSHR number:</b> <input type="text"/>	

[HTML V 1.1 American Red Cross Gold Country Region 20176.1.4]

[Submit Form](#)

Figure 4 Safe and Well Registration

For further information please contact:

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**Volunteer Disaster Health Services**  
**Liaison to Amateur Radio**  
**American Red Cross, Gold Country Region**  
**1565 Exposition Blvd, Sacramento, CA 95815**  
**530-889-2951 jim.piper@redcross.org**



<sup>i</sup> Mr. Dave Freese, who programmed *fldigi*, modified it to create a "simple" or "agency" user interface for the Red Cross. The American Radio Relay League Sacramento Valley Section Emergency Coordinator for ARES, Mr. Greg Kruckewitt coded HTML forms that duplicated the Red Cross disaster forms found on the Red Cross Exchange. Both of these gentlemen did so as donations to the Red Cross.