



**HARDROCK 100**  
**COMMUNICATOR'S MANUAL**

**July 9 to July 11, 2010**

This manual as well as the Aid Station Volunteer and Runners' Manuals and other information is available at: [www.hardrock100.com](http://www.hardrock100.com) Click on the link to the Volunteers' Site.

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## HARDROCK 100 CONTACT INFORMATION

### **RUN DIRECTOR**

Dale Garland  
195 Ball Lane  
Durango, CO 81301  
970-259-3693  
[daleREMOVE@hardrock100.com](mailto:daleREMOVE@hardrock100.com)

### **CO-DIRECTORS OF COMMUNICATIONS**

Steve Blaylock - NOØHGV  
1831 Crestview Drive  
Durango, CO 80301  
970-259-0932  
[ssblaylockREMOVE@msn.com](mailto:ssblaylockREMOVE@msn.com)

Shauna Blaylock - KCØLFF  
1831 Crestview Drive  
Durango, CO 80301  
970-259-0932 [kcØlffREMOVE@gmail.com](mailto:kcØlffREMOVE@gmail.com)

### **RADIO AND TECHNICAL SUPPORT**

Ben McGaha – KB5ITS  
PO Box 5365  
Farmington, NM 87499  
[kb5itsREMOVE@hotmail.com](mailto:kb5itsREMOVE@hotmail.com)

### **RADIO AND TECHNICAL SUPPORT(cont)**

Harley Murray – KC5CHM  
PO Box 625  
Silverton, CO 81433  
970-387-0248  
[kc5chmREMOVE@hughes.net](mailto:kc5chmREMOVE@hughes.net)

### **PACKET RADIO**

Chris Depuy - WBØITG  
1121 S. 2<sup>nd</sup>  
Montrose, CO 81401  
970-240-1654  
[cdepuyREMOVE@tristategt.org](mailto:cdepuyREMOVE@tristategt.org)

### **DIRECTOR OF AID STATION VOLUNTEERS**

Lois MacKenzie - KCØWSP  
P.O. Box 33  
Silverton, CO 81433  
970-387-5480  
[skunkearsREMOVE@yahoo.com](mailto:skunkearsREMOVE@yahoo.com)

## INFORMATION FOR RADIO OPERATORS

### GENERAL

1. **Safety** - Your personal safety is most important. Aid station operators should be prepared for any weather and are **strongly urged to buy the Colorado Hiking Certificate**. It costs only a few dollars and covers the cost of search, rescue, and evacuation should you become lost or injured. It is available at Outdoor World, 1234 Greene St., Silverton and sporting goods stores elsewhere. (A valid Colorado hunting or fishing license provides the same coverage.)
2. If thunderstorms approach, take appropriate cover.
3. **Self Sufficient** - You should be prepared to be self sufficient, "self contained". This means you need to bring your own: radio equipment (don't forget your manuals), batteries, clothing, food and if you're staying overnight in an aid station your own sleeping equipment and tent. **Do not expect or depend on help or assistance from others.**
4. **The Environment** - The terrain is especially fragile at high elevations. Please be careful to minimize impact.
5. **Aid Station Operators** – We recommend you contact your aid station's captain before the run to coordinate travel to the station. Names, phone numbers and/or email addresses may be obtained from Lois MacKenzie at [skunkREMOVEears@yahoo.com](mailto:skunkREMOVEears@yahoo.com).
6. Comm Aid Station Packets will be given to you either at the 2pm briefing on Thursday or will be sent with the aid station supplies. Items in the packet include this manual, a supply of runner log sheets, an opening comm station sheet and a list of runners.
7. Don't forget a watch set as accurately as possible.
8. Bring: pencils, flashlight, and something to write on such as a clipboard and scratch paper.
9. The noise level at busy aid stations is sometimes loud. A headphone for your radio may be helpful.

### FRS / GMRS RADIOS

If you have FRS or GMRS radios, bring them. In the aid stations, you could use up to three (3). It has been suggested to send an aid station volunteer out a distance down the trail and then have them radio in runner's numbers. Then have the second radio with the comm personnel, the third with the aid station volunteers. This way the aid station can be prepared for runners, by numbers before they arrive at the aid station. If you have a mobile radio with cross band capabilities consider bringing a handheld to give you more mobility/freedom around the aid station.

### PACKET RADIO

Due to the good work of Chris Depuy WBØITG and his crew, we continue to expand the packet network. When the packet is available, it makes a big difference, quiets the voice network, and saves solar repeater batteries. When packet is available, we'd prefer to use it to relay runners' numbers and times.

### REPEATERS

Please read the frequencies/repeaters/diagram section of this manual as it outlines which repeaters each aid station shall use during the run. If there are any changes made as to which repeater to use you will be notified by either HQ Net Control or by a repeater team member.

There is substantial battery and solar panel capacity at both the Kendall Mtn and Engineer Pass repeaters. While this capacity is more than sufficient for normal use, we know from past experience that the volume of Hardrock traffic taxes the entire system. If we have a string of cloudy days, the solar panels will not recharge the batteries.

## RADIO PROTOCOLS

1. Use frequencies listed in this manual unless directed to do otherwise by Silverton HQ.
2. Headquarters in Silverton is **NET CONTROL**. All traffic should be directed to Silverton. Ask permission to talk to others besides Silverton. Do not have side conversations on run frequencies.
3. LISTEN before you transmit. THINK before you transmit. Know what you're going to say.
4. Use tactical calls. For example: "Silverton, Engineer", Wait for acknowledgment "Go ahead Engineer". At the end of your transmission close using your call: For example: "Engineer clear, W3GEY" Or "Silverton copies, K0JJJ"
5. Don't worry about getting all the runners times in at the stations before or after yours. If you can catch them as you monitor that is fine, however, due to battery and voice traffic concerns please do not call Silverton to ascertain whether a runner has made it to the next, or left the previous aid station, etc. If you are a packet station, you will have access to all runner data reported by packet so you should be able to get this information without causing battery/voice traffic concerns.
6. Silverton HQ may be busy with another transmission when you call, and will respond asap with a "Stand by..." When Silverton HQ is ready for you they will call to let you know.
7. Silverton HQ will keep track of missing/late runners and will alert stations as needed.
8. Silverton HQ will periodically update all stations regarding drops.
9. Keep transmissions short and to the point, no extra talking please.
10. DO communicate problems and issues to HQ. Run Director, Dale Garland, has final authority.
11. Traffic is prioritized in the following order:
  - o Injured runner, need medical help, evacuation, etc.
  - o QSO regarding a runner status - (i.e. HQ has broadcast that a runner is late to an aid station and you have contact with the runner - this is important because there have been times when search and rescue have either been called out or are poised to go out so the sooner we can call them off the better.)
  - o Runner times in/out
  - o Aid station needs - response to this will depend upon how busy other transmissions are and availability of the aid station coordinator/run director to respond.
12. Radio traffic is NOT to be used for inquiries by crews, spouses, etc. to ascertain runner location - this information is on the hardrock100 LIVE! Website.
13. Radio traffic is NOT to be used by runners to contact crew, spouses, etc. Runners are responsible for setting contact places, times, etc. with crews in advance of the run.
14. Aid station captains and radio personnel may request special circumstance reporting when ABSOLUTELY necessary.
15. Be prepared for darkness, cold, and inclement weather.
16. POOR RF links are common given some of the remote locations. Changes in conditions can alter where the "hot spot" is during the run. Be prepared to try other locations within your aid station. You may need to realign your antenna, go to higher power, etc. to re-establish a link. If you try all of this and still cannot communicate, try other frequencies to alert HQ. The repeater team will troubleshoot and help you re-establish communications. DO NOT LEAVE YOUR AID STATION.
17. REPEATER TIMEOUTS: Be aware of the timeout limits of the various repeaters
18. **STAY BY YOUR RADIO AND LISTEN**: Your comm station should be manned while your aid station is opened. Report to Silverton when your station will be un-manned for more than a few minutes. If you are a lone radio op at an aid station plan on leaving your radio on if you are taking a break (nap) and have aid station personnel wake you if Silverton calls you.
19. At least one Ham radio operator needs to **REMAIN AT THE AID STATION UNTIL RELEASED** by Silverton. Silverton will release the radio operators after all runners are confirmed to have arrived at the next aid station.

## COMM STATION OPENING

1. Set up and open your Comm station **before** the aid station opening time.
2. Test, confirm the RF link.
  - o Check in with Silverton HQ when you are set up and again when you open your station
3. Be prepared to copy from Headquarters:
  - o Additions to runners list.
  - o Deletions from runners list.
  - o Runners who have dropped.
  - o Time first runner left previous station (if pertinent)
  - o Count of runners between your station and the previous station

## LOGGING PROTOCOLS

1. Log runners' times out from the previous aid station as you are able to hear them
  - o Silverton will NOT provide this in separate communiqué
2. Log runners' times into your aid station.
3. Log runners' times out of your aid station.
4. Log pacers in or out for each runner with a pacer
5. Log runners' times into the next aid station as you are able to hear them
  - o Again, Silverton will NOT provide this in a separate communiqué

## AID STATION LOGGING FORM

### Aid Station Date Military Time By

### Count Runner # Prev Out Time In Time Out PI PO DO Rptd In Next Comments

Aid Station Fill in aid station name

Date Fill in

MilitaryTime Fill in

By Enter your call sign

Count: The total consecutive count of runners logged.

Runner #: Runners' number

Prev Out Out time for runner for previous aid station

Time In In time for runner for your aid station

Time Out Out time for runner for your aid station

PI Pacer In: Check (✓) for pacer with a runner leave untouched for a runner alone

PO Pacer Out: Check (✓) for pacer with a runner leave untouched for a runner alone

In Next In time for runner at the next aid station

DO Circle if the runner has dropped out at your aid station

Rptd Check (✓) when reported to and confirmed by Hqters

Comments Comments

The underlined columns above are the ones that must completed. Use a check mark in the PI and PO columns to indicate a pacer came in and/or left with the runner. Circle the DO to indicate the runner dropped out at that station.

To the extent that you can hear the previous aid station you should enter runner out times in the "Prev Out" column to help know when to expect incoming runners. If you can hear the following aid station you can put a check or time in the "Next In" column when runners are reported in there. These procedures will alert you to overdue runners. In such cases please alert HQ operators in case they have not become aware of this.

**Return all logs to headquarters** after your aid station closes.

**NOTE: ALL FORMS ARE AVAILABLE AT [WWW.HARDROCK100.COM](http://WWW.HARDROCK100.COM) ON THE VOLUNTEER SITE. COPIES OF ALL NECESSARY FORMS WILL BE INCLUDED IN THE AID STATION COMM PACKET.**

## **REPORTING RUNNER TIMES - PROTOCOLS**

**Data to be Transmitted** - The data to be transmitted is: **runner number, in time, and out time.** If a runner has a pacer, that should be sent with the in or out time. **BE SURE TO TELL HEADQUARTERS IF A RUNNER DROPS OUT OR IF THERE IS CONCERN ABOUT A RUNNER'S CONDITION.**

1. Report runner times to headquarters when there is a break in the action.
2. Report in a timely manner so that the people at HQ can log information into Hardrock Live! Hardrock Live! is a near real-time connection to the Internet, and the need to report runners' times regularly is important: our "near real-time" link with the Internet, is only as "real-time" as calling in the runners' times and numbers.
3. Radio runners' numbers in groups of 5 or less, breaking between sets of five
  - For example:
    - a. "Silverton, Grouse"
    - b. (Silverton) "Go ahead Grouse."
    - c. (Grouse) "I have 14 runners to report"
    - d. "Runner 45, in eleven, oh, eight, out at twelve, fourteen, pacer in, pacer out"
    - e. "Runner 72, in eleven, oh, nine, out eleven, forty-five"
    - f. "Runner 110, eleven, twenty-one, eleven, fifty-six"
    - g. "Runner 23, eleven thirty-one, twelve, oh-one"
    - h. "Runner 36, eleven three-three, dropped at Grouse.
    - i. "Break" (pause a couple of seconds)
    - j. (Silverton) "QSL, continue"
    - k. (Grouse) (continues with 5 more runner times)
4. When transmitting runner in/out times use **MILITARY TIME**
  - 6 AM is written 06:00 and pronounced: "Oh six hundred."
  - 2:12 PM is written 14:12 and pronounced: "Fourteen, twelve."

## HEADQUARTERS SPECIFIC INFORMATION

Log in duplicate when possible. In other words, have two ops listening for incoming traffic and both independently logging. Back-up logger must indicate at the top of the sheet that it is a back-up log. Use a single sheet for each QSO, for each group of times coming in from an aid station.

### HEADQUARTERS LOGGING FORM

**Date Military Time # By**

**Aid Station Names**

**Compu Runner # Time In Time Out PI PO DO Comments**

Date Fill in

Military time Fill in at beginning of transmission

# Number all sheets from 1 to ? as they are used. You will probably not use all spaces on all sheets since different stations will be reporting and must be on separate sheets

By Enter your call sign

Aid Station Circle the name of the aid station reporting. Put ONLY information from one aid station on a sheet

Compu: Checked when information is loaded into the computer

Runner #: Runners' number

Time In In time for runner at your aid station

Time Out Out time for runner for your aid station

PI Pacer In: Check (✓) for pacer with a runner leave untouched for a runner alone

PO Pacer Out: Check (✓) for pacer with a runner leave untouched for a runner alone

DO Circle if the runner has dropped out at this aid station

Comments Comments

1. After each QSO, place the log sheet in the "In Box" for computer operator.
2. The computer op logs the information into the Hardrock 100 program. Remember to check the **Compu(ter)** box for each contact logged.
3. After computer entry place sheets into their appropriate aid station folder.

### OTHER HEADQUARTERS INFORMATION

1. Keep the runner drop list up to date.
2. **All requests for search and rescue or other emergency action from the aid stations must be referred to the run director, Dale Garland, or his deputy for action.**
3. HQ is the authority for releasing aid stations. Do not release an aid station until all runners have reached the next station.
4. Only authorized personnel, including comm personnel, the run director, aid station director, medical personnel should be in the comm. room at HQ. Too many people and too much noise jeopardize the communications accuracy.
5. One person, representing those keeping the big board in the gym up to date with runner times may approach comm. personnel for reports to that end.
6. Finish Times must be recorded on the Finish Log Sheet and input to the computer.

## ADDENDUMS

### 2010 FREQUENCIES, REPEATERS, AND DIAGRAM

This document outlines the frequencies for each aid station to use during the run. Please use the frequencies listed herein to insure a smooth operation. If you have any questions please contact Ben McGaha, KB5ITS, or Harley Murray, KC5CHM.

#### Frequencies to use for the 2010 run

1. KT will use 146.460 simplex or 444.000+ pl 67.0
2. Chapman will use 147.540 simplex, pl 100.0
3. Telluride needs to use 147.00+ pl 67.0
4. Kroger/Viginus will report in on 147.000+ pl 67.0
5. Governor's Basin will listen on 147.000+ pl 67.0 and report on 147.270+ pl 127.3
6. Ouray, Engineer, and Grouse will use 147.270+ pl 127.3
7. Sherman, Pole Creek, and Maggie will use 145.250- pl 127.3
8. Cunningham will listen on 145.250- pl 127.3 and will report on 147.375+ pl 156.7

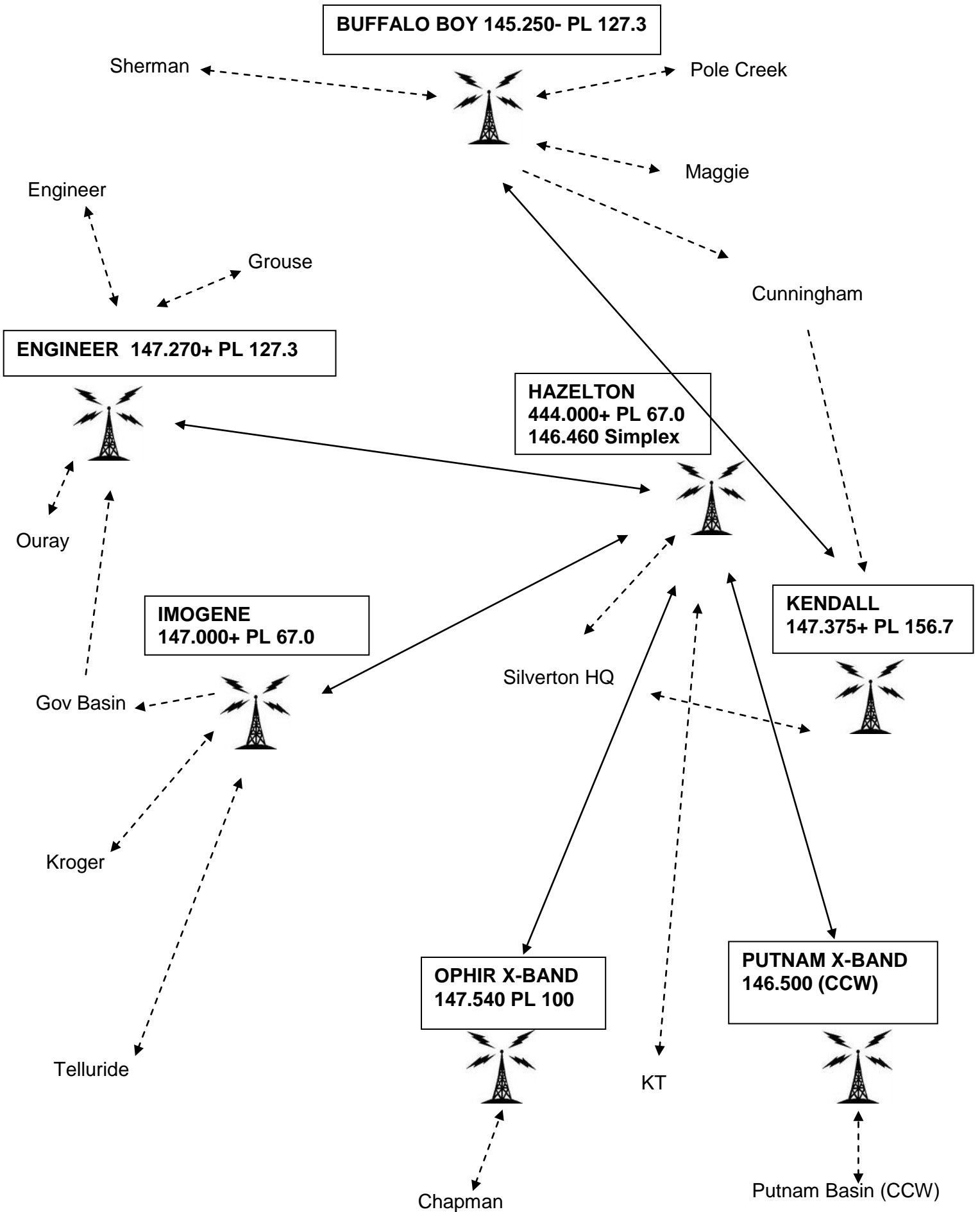
#### Repeater List by Name/Frequency

1. Hazelton 444.000+ pl 67.0 and 146.460 simplex
2. Ophir X-Band 147.540 simplex pl 100
3. Imogene 147.000+ pl 67.0
4. Engineer 147.270+ pl 127.3
5. Buffalo Boy 145.250- pl 127.3
6. Kendall 147.375+ pl 156.7

#### Radio protocol reminders

1. Key your mike, then wait about one second before transmitting
2. Use tactical calls, example, "Silverton, this is Ouray"
3. Wait for acknowledgement to proceed
4. Use your call sign at the end of the transmission "KC0LFF, Silverton, clear" or "Silverton clear, KC0LFF"
5. DON'T WORRY ABOUT GETTING ALL THE RUNNERS TIMES IN AT THE STATION AFTER YOURS. If you can catch them as you monitor that is fine, however, due to battery and voice traffic concerns please do not call Silverton to ascertain whether a runner has made it to the next, or left the previous aid station, etc. If you are a packet station, you will have access to all runner data reported by packet so you should be able to get this information without causing battery/voice traffic concerns.
6. Silverton will keep track of missing/late runners and will alert stations as needed.
7. Keep transmissions short and to the point, no extra talking please.
8. DO communicate problems and issues to Headquarters in Silverton. Run Director, Dale Garland, has final authority.

Map on following page is for a general idea of set-up, it is NOT to scale. Repeater locations are approximate in relation to each other, and are not geographically accurate.



**AID STATION OPEN/CUT-OFF TIMES  
LEADER EXPECTED/48 HOUR PACE**

AidStationName	Opening Time	Cut Off Time	Approx. Release Time	Leader Expected	48 Hour Pace	Mileage	Miles Between Legs
KAMM TRAVERSE	Fri 0710	Fri 1245	Fri 1600	FRI 0810	FRI 0950	11.5	11.5
CHAPMAN GULCH	Fri 0820	Fri 1600	Fri 2000	FRI 0920	FRI 1250	18.1	6.6
TELLURIDE	Fri 1010	Fri 2000	Fri 2345	FRI 1110	FRI 1640	27.8	9.7
KROGER CANTEEN	Fri 1140	None	Fri 2345	FRI 1240	FRI 2000	32.7	4.9
GOVERNOR'S BASIN	Fri 1200	Fri 2345	Sat 0315	FRI 1300	FRI 2100	35.9	3.2
OURAY	Fri 1300	Sat 0315	Sat 1030	FRI 1400	FRI 2315	43.9	8.0
ENGINEER	Fri 1510	None	Sat 1030	FRI 1610	SAT 0400	51.9	8.0
GROUSE GULCH	Fri 1625	Sat 1030	Sat 1630	FRI 1725	SAT 0730	58.4	6.5
SHERMAN	Fri 1940	Sat 1630	Sun 0200	FRI 2040	SAT 1345	71.9	13.5
POLE CREEK	Fri 2225	None	Sun 0200	FRI 2325	SAT 1815	80.8	8.9
MAGGIE GULCH	Fri 2330	None	Sun 0200	SAT 0030	SAT 2015	85.1	4.3
CUNNINGHAM GULCH	Sat 0100	Sun 0200	Sun 0600	SAT 0210	SAT 2350	91.2	6.1
HEADQUARTERS	Fri 0500	Sun 0600	Sun 0900	SAT 0440	SUN 0600	100.5	9.3

Approximate release times are only an estimate. Silverton HQ will release your aid station when all runners have reached the next aid station.

## **DIRECTIONS TO AID STATIONS**

### **ACCESS, GPS COORDINATES, DIRECTIONS FROM SILVERTON, AND ALTITUDES**

#### **CUNNINGHAM**

Access: Auto / RV

Lat: 37° 48.725'      Long: 107° 34.654'

Approximate Altitude: 10,400'

From Silverton, take SR110 NE up the Animas River +/- 4 miles to Howardsville following signs to the Old Hundred Mine Tour. Immediately after crossing Animas River bridge at Howardsville, turn RIGHT, SOUTH up the valley toward Stony Pass. At 2 miles do not turn left onto the Stony Pass road, but instead angle RIGHT (southeast) toward the Highland Mary trailhead. +/- 2 miles beyond the Stony Pass road, not the corral on the right (west). Go 300 meters (south) beyond the corral to a large clearing. The aid station is in the clearing between the road and the creek.

#### **MAGGIE GULCH**

Access: Rugged 4 WD

Lat: 37° 49.160'      Long: 107° 32.170'

Approximate Altitude: 11,700'

From Silverton, take SR 110 NE up the Animas River +/- 6-1/2 miles to the "Middleton" and the Maggie Gulch sign on the right (FS588). Turn RIGHT up the Maggie Gulch road. Continue up this rugged 4WD road +/- 3-1/4 miles to the end.

#### **POLE CREEK**

Access: 4WD + Backpack in

Lat: 37° 48.180'      Long: 107° 28.400'

Approximate Altitude: 11,500'

STONY PASS / POLE CREEK: From Silverton, take SR110 NE up the Animas River +/- 4 miles to Howardsville. Immediately after crossing Cunningham Creek, turn RIGHT up the valley. Just as you are passing the old aerial tram station – now a house – look left for the road up Stony Pass road. Take the Stony Pass road up over 4WD 12,588' Stony Pass +/- 9 miles to the confluence of Pole Creek and the Rio Grande River. Ford Pole Creek. Check Pole Creek's depth before attempting to ford the creek. There's a beautiful meadow car camping site on the left hand side, just 100 yds or so after fording Pole Creek. Hike NORTH about 3 - 4 miles up the La Garita Stock Driveway to the Pole Creek Aid Station. The Aid Station site is on a bench about ¼ mile west and above Pole Creek at 11,500' up the West Fork valley.

MAGGIE GULCH AID STATION: From the Maggie Gulch Aid Station (see directions above) follow the Hardrock 100 trail approximately 4.3 miles to the Pole Creek Aid Station. The Pole Creek Aid Station is up in the flat section, near the trees, a 100 yds SW of the small tarn, just before the trail makes the final 100' vertical drop down into the bottom of the Pole Creek valley.

MINNIE GULCH: From Silverton, take SR 110 NE up the Animas River +/- 7 miles to the Minnie Gulch (FS587) road on the right. Turn RIGHT up the Minnie Gulch road. Continue up this rugged 4WD road +/- 3 miles to the trailhead. From the trailhead, hike SE over the Continental Divide +/- 5 miles to the junction with the Hardrock 100 Trail. Take the HRH Trail right +/- ½ mile. See Maggie Gulch / Stony Pass access for Pole Creek aid station site description.

## **SHERMAN**

Access: 4WD from Silverton or Auto / RV Lake City

Lat: 37° 54.057' Long: 107° 25.980'

Approximate Altitude: 9,400'

CINNAMON PASS – 4WD: From Silverton, take SR 110 NE up the Animas River +/- 11 miles to Animas Forks. Continue another +/- 5 miles to the Cinnamon Pass road on the RIGHT. Continue over Cinnamon Pass +/- 15 miles to the Sherman turnoff on the RIGHT. You'll know you're close to the Sherman turn when the road becomes significantly better at the bottom of the shelf road. Look for the BLM sign that faces Lake City. Turn sharply right (west) on the Sherman road, then one mile to the BLM latrine and Cascade Creek Trailhead where the aid station is located.

LAKE CITY – AUTO: From LAKE CITY take SR149 south to the turnoff to Lake San Cristobol. Continue past Lake San Cristobol to the end of the pavement. Continue on SR30 about 14 miles to the signed turnoff to Sherman. Continue one mile to the BLM latrine and Cascade Creek Trailhead where the aid station is located.

## **GROUSE GULCH**

Access: Auto

Lat: 37° 55.053' Long: 107° 33.499'

Approximate Altitude: 10,800'

From Silverton, take SR 110 NE up the Animas River +/- 11 miles to the intersection of SR 110 and the road up Burns and Picayune Gulches. Just beyond the sign for Picayune Gulch and just before the Animas River bridge, turn LEFT (NW) onto a dirt road. The aid station is on the flats southwest of the bridge and close to the main road. Grouse Gulch is a popular Aid Station for runners' crews, and parking can be at a premium.

## **ENGINEER**

Access: 4WD + Backpack in.

Lat: 37° 59.201' Long: 107° 36.401' (GPS Coordinates are approximate.)

Approximate Altitude: 11,800'

FROM SILVERTON: Take SR 110 NE up the Animas River following signs for Engineer Pass. The pass is +/- 16-1/4 miles from Silverton at approximately 12,500'. Park on the pass. Hike west off the pass down an old jeep road to meet the HRH course below Oh Point! (up on the left). The aid station is +/- 1-1/2 miles down the trail from the pass.

FROM LAKE CITY: Drive west on the Engineer Pass road (it starts in the middle of town) +/- 18 miles to 12,500' Engineer Pass. Park on the pass. Hike west off the pass down an old jeep road to meet the HRH course below Oh Point! (up on the left). The aid station is +/- 1-1/2 miles down the trail from the pass.

OH POINT TO ENGINEER AID STATION: The HRH trail crosses the road out to Oh Point! at about mid-way from the Engineer Pass road. Follow the HRH trail NORTH off of the Oh Point! road for +/- 1.6 miles to the Engineer Aid Station Site.

## **OURAY**

Access: Auto / RV

Approximate: Lat: 37°01.675' Long: 107°40.343'

Approximate Altitude: 7,740'

FROM SILVERTON: Take SR 550 north from Silverton over Red Mountain Pass +/- 23 miles to Ouray. The Hardrock aid station is in the city park, next to the hot spring on the north end of town. To find the park, drive to the North (downhill) end of Ouray. Look for the big "Ouray Hot Spring Park" sign. If possible, park in the hot springs parking lot. The aid station is on the lawn south (toward downtown) of the pool building.

## **GOVERNOR BASIN**

Access: Auto

Lat: 37° 58.928' Long: 107° 45.675'

Approximate Altitude: 10,800'

FROM SILVERTON: Take SR 550 north from Silverton over Red Mountain Pass +/- 23 miles to Ouray. As you are descending the last mile down into Ouray, look for signs for SR361, Bird Camp, or Imogene Pass. Turn LEFT and drive +/- 6.6 miles to the Governor Basin aid station on the left. (At +/- 5 miles, where the road turns left to Imogene Pass, keep to the right to Governor Basin.)

## **KROGER CANTEEN (FORMERLY KNOWN AS VIRGINIUS PASS)**

Access: Auto, Backpack in

Lat: 37° 57.107' Long: 107° 46.303'

Approximate Altitude: 13,100'

FROM SILVERTON: Take SR 550 north from Silverton over Red Mountain Pass +/- 23 miles to Ouray. As you are descending the last mile down into Ouray, look for signs for SR361, Bird Camp, or Imogene Pass. Turn LEFT and drive +/- 6.6 miles to the Governor Basin aid station on the left. The left fork at Governor Basin aid station and continue southwest as far as possible. Then hike the HRH trail to Virginus Pass. The Virginus Pass aid station is approximately 3.2 miles southwest (and above) the Governor Basin site.

## **TELLURIDE**

Access: Auto / RV

Lat: 37° 56.099' Long: 107° 48.379'

Approximate Altitude: 8,800'

From the Court House on Main Street in Telluride, go east to Willow Street. Turn RIGHT (south) on Willow Street and go about ½ block the turn left (east) in front of the blue condos (Muscatel Flats). You are in a parking lot. At the east end of the parking lot, cross the San Miguel River foot bridge and follow the side walk to the aid station at the permanent canopy in the Telluride Town Park.

### **CHAPMAN GULCH**

Access: Auto or 4WD

Lat: 37° 51.350' Long: 107° 48.255'

Approximate Altitude: 10,200'

4WD FROM SILVERTON: Take US 550 north from the south end of Silverton. Near MP 75, turn west onto the Ophir Pass road. This intersection is marked with a large green sign. Take the dirt road to Ophir Pass (11,800'). The road becomes noticeably rougher and steeper on the two mile descent to the aid station south the Ophir Pass road. The aid station is left (south) off the Ophir Pass road soon after the second creek or "wet area" crosses the road after entering the woods. You will probably have to park on the Ophir Pass road and about walk 0.40 miles down to the aid station. Although rougher roads exist in the San Juans, the upper section of the west side of Ophir Pass is not for the faint of heart.

2WD FROM TELLURIDE: Exit Telluride on Main Street and go west about 3 miles to SR 145. Turn LEFT (south) and go about 10 miles to Ophir Pass road on the left. This intersection is marked with a green sign. Turn LEFT (east) and pass through the hamlet of Ophir, taking care not to lose your muffler or teeth on the speed bumps. As you leave Ophir, note the number of new house as the road enters the aspen forest. The aid station will be down the side road to the right about 1-1/4 miles from Ophir. You will probably have to park on the Ophir Pass road and about walk 0.40 miles down to the aid station.

### **KAMM TRAVERSE**

Access: 4WD

Lat: 37° 47.531' Long: 107° 47.555'

Approximate Altitude: 10,600'

FROM SILVERTON, take US 550 NORTH about 2 miles to the Mineral Creek road on the left. Follow signs to the Mineral Creek Campground. Take unpaved Mineral Creek road west +/- 6 miles to the Kamm Traverse aid station. The aid station is situated west of Porcupine Creek and where the HRH trail comes in from the northeast. This is about 1.7 miles beyond Mineral Creek Campground. There is very limited parking at the Kamm Traverse aid station.

### **PUTNAM BASIN**

Access: Auto, then Backpack in

Lat: 37° 46.849' Long: 107° 43.944' NAD27

Approximate Altitude: 11,475'

FROM SILVERTON: Take US 550 south (toward Durango) to the Little Molas Lake turnoff on the right. Park in the Little Molas Lake Campground. There are two possible trails. The Colorado Trail (CT) which leaves the camp area and ascends the ridge to the west in a dog-leg route or a "cut-off" trail which cuts-off the dog-leg of the CT and joins it on top of the ridge to the northwest. From either trailhead, go north +/- 2.7 miles to a trail which "Y's" off to the north. Note that this junction is past the low point of the saddle where many confusing elk trails originate. This intersection is at approximately: Lat: 37°45.957', Long: 107°43.950' and the trail north heads up the west side of the large valley to the north. Putnam aid station is approximately 1 mile north, after you cross Putnam Creek, and uphill on the HRH trail to approximately tree line.