Barcode Pilot Trip Report

Start Date: April 2011
End Date: September 2011

By: Gina Bald, Deputy Project Manager
November 1, 2011

Background

The I-Suite Barcode Pilot Team (hereafter referred to as 'Pilot Team') achieved great success in 2009 and 2010 with the deployment of barcode technology at incidents in the Supply Unit. The results are outlined in the 2009 and 2010 Barcode Pilot Trip Reports located at http://isuite.nwcg.gov.

To build on the project's success and to gain additional exposure and acceptance, the project was tasked by Tory Henderson, Branch Chief – Equipment and Chemicals, and Sarah Fisher, Branch Chief – Incident Business Practices, to expand the pilot in 2011 to all Geographic Areas with any interested Incident Management Teams (IMTs).

Supply Unit barcoding has been piloted on twelve incidents:

- 2009 - Three Incidents:
  - La Brea (Pincha-Tulley Type 1 IMT, Los Padres National Forest)
  - Morris (Woychak Type 2 IMT, Angeles National Forest)
  - Big Meadow (McGowan Type 1 IMT, Yosemite National Park)

- 2010 - Three Incidents
  - Rooster Rock (Rapp Type 2 IMT, Deschutes National Forest)
  - Scott Mountain (Pendleton Type 1 IMT, Wallowa-Whitman National Forest)
  - Harris Complex (Heintz Type 2 IMT, Idaho Department of Lands)

- 2011 - Six Incidents
  - Crystal (Summerfelt Type 1 IMT, Arapahoe/Roosevelt NF and Larimer County)
  - Duckett (Pechota Type 2 IMT, Pike/San Isabel NF)
  - Jarhead (Hughes Type 1 IMT, Big Cypress National Reserve, NPS)
  - High Cascade (ORCA Type 2 IMT, Warm Springs Reservation, BIA)
  - Dollar (West Type 2 IMT and Pendleton Type 1 IMT, Deschutes NF)
  - Motor (Cooper Type 2 IMT, Sierra NF)

  Note: Barcoding was tried briefly at West Texas Initial Attack, headquartered in Merkel, Texas. However, the Supply Unit's setup and the amount of business worked best with the manual process.

The six barcode kits were pre-positioned at National Caches and moved as needed.

This Pilot year was the first time that Pilot Team members left IMTs alone for a few days after setting up the barcode equipment and ensuring things were working smoothly. Team members were available via phone for support. Additionally, Supply Module bugs found in the 2010 Pilot were fixed and requested enhancements discovered during the 2009/2010 Pilots were implemented (Exchanges, Replacements, Release Waybills, and Reports).

2011 Pilot Team members:

- Gina Bald, I-Suite Deputy Project Manager
- Donna Tate, I-Suite Project Lead
- Jeff Park, Contractor, RTL

2011 Incidents

Crystal Incident
Pilot Start: April 4
Pilot End: April 11

On April 4, Rocky Mountain Area Type 1 IMT Summerfelt was mobilized to the Crystal Incident, Arapahoe/Roosevelt NF and Larimer County. Pilot Team Member, Jeff Park, arrived at ICP on April 4 and departed April 11. Jeff received a call to implement the bar code project at 1200 hours and was onsite by 1600. The kit was ordered from the Rocky Mountain Cache at 1300 and arrived at ICP at 1530.

Supply was set up about 1.5 miles from the I-Suite server with no direct line of sight. To accomplish remote access, a Cisco wireless connection was setup between the I-Suite server and a building close to Supply. The wireless link to Supply was completed via the EnGenuis system contained in the barcode kit. A crossover cable was provided by the IMT to connect the two wireless systems. This was set up and working by 1830 on the initial day. It was not until the following morning that actual connection to the I-Suite server was made. Overall the setup was completed in about one half of an operational period.

There were some issues with the EnGenuis documentation as the actual devices were set up as 10.1.1.5 and 6, however all the documentation indicated that they should have been at 10.10.10.x out of the box. The documentation and devices need to be in sync (This was corrected for this kit by changing the devices to match the documentation). Additionally, the documentation needs to make it clear that to access the EnGenuis via the internet browser on the laptop, the IP address needs to match the first three numbers of however the EnGenius is set up.

The team was using a 10.10.10.x network configuration with DHCP. Scanners started up right out of the box and needed no additional setup. For the most part the scanners were solid for the whole incident. There were only a couple of times when equipment was moved or power lost that the scanners had to be powered down and reset using the kit instructions. In each case, following the instructions exactly resulted in the scanners coming back up.

I-Suite Beta Version 5 2010 was used on this incident. After a thorough discussion the IMT agreed to go fully automated and no paper records were kept. The exceptions were early issues and as a backup system when the power failed (which happened one or two times).

Training of the Supply Receiving and Distribution team, as well as two camp crew members from the Idaho Corrections Crew, was accomplished on April 5. The system was up and running prior to the Supply Unit officially opening for business. This was extremely helpful and facilitated a decision to go fully paperless from the start.

Wind and rain forced the movement of computers into the cache van. Weather played out to be a big issue here. Along with the wind were periods of rain and snow. A suggestion was made to have the barcode project roll in a van or trailer. As a minimum a yurt should be a part of the required pre-order to use the pilot. Customer flow was certainly impacted by the location of the computers, but the team worked through it. Eventually a yurt was set up and the barcode operations were moved inside the yurt.

Excellent assistance was received from the Computer Technical Specialists (CTSP) Flint Cheney and Derrick. Not only did Flint assist in setup of the wireless, but he provided Derrick (Trainee CTSP) to assist with training and setup.

The IMT was skeptical at first but very supportive of the pilot effort. Their skepticism gradually diminished and they fully embraced the process. The IMT chose to track the issue of most consumable items (i.e.,

batteries, flagging, canteens) and this went very well. The ICBS Shipping List imports were tested and ran successfully.

On the second full day of the barcode implementation, Supply Unit personnel were operating mostly independent of the Pilot Team and figuring out roadblocks or questions on their own. On April 7 - 11, returns to the Rocky Mountain Fire Cache were entered and automated Release to Cache Waybills created. The IMT was very happy with the waybill process for sending a shipment back to the cache. Some items were not on the cache list and some property number were assigned to things like gas cans but overall the process was very smooth.

Incident Demobilization started on April 7. Barcode Cards were collected in the Supply Unit after a resource's issue history was reviewed for trackable and/or durable items to be returned and before checkout sheets were signed.

Lessons Learned

Notable Successes at this Incident

- Despite the mile plus distance from the I-Suite server, with no direct line of sight, connection was successful through the use of two wireless systems and connection was reasonably solid
- The Supply Unit went paperless for Issues/Returns from the beginning of the incident
- After some initial reluctance, the IMT was very receptive to use of the application after seeing how simple it was to operate and the advantages provided
- The IMT was very accommodating in providing CTSP support and shelter to continue operations of the electronic equipment
- The Pilot continues to illustrate the fact that when barcoding is fully implemented, an additional CTSP will be needed to help in the Supply Unit for setup and support
- The Camp Crew quickly learned the Supply Module and needed very little support after Day 2
- The ICBS Import of Shipping Lists was successful however it appears that more investigation needs to be made into the accuracy and completeness of the shipments
- The ICBS Import provided property numbers for trackable items, however those property numbers did not import for generators and yurts. Some pump property numbers were additionally reflected on a gas can and pump fitting.
- The Property Reports were very helpful to keep track of trackable items assigned to locations (i.e., Division A, Staging Areas)
- The Lessons Learned from previous assignments aided in quickly setting up the equipment and implementing Supply Unit Business Processes for success
- Briefing the Camp Crew and Receiving and Distribution Managers upon arrival was instrumental in them taking ownership
- Produced Waybills for items Released to Cache using the release report. This process was very successful.
- The Contingency plan was activated when a breaker flipped at the Supply Unit power source and the breaker could not be found. The manual process was implemented. The automated process picked up again when back on generator power and all hand sheets were entered at that time.
- Finance and Demob were included in discussions of the Supply Module, and Finance in particular found it very helpful to be able to see supply items issued. The application was, however, not correctly identifying when a resource had items checked out. The pop up box in the Time Module would pop up even if only consumables were checked out.

Limitations or Special Needs at this Incident

- Weather, specifically wind, along with rain and snow, hampered the ability to keep the barcode equipment operating from within the supply checkout
- The Barcode kit equipment was configured for a 10.1 setup for Region 1 and had to be reconfigured to a 10.10 network. Documentation previously created helped in making setup go more smoothly.
- Two wireless systems were required, which exceeded the capabilities of the kit

After Action Review (AAR)

Informal AARs were held with the Supply Unit Leader, R&D Managers, Logistics Section Chief, and CTSPs. The following comments were captured:

What Went Well

- The Pilot received good input and suggestions from IMT
- Bugs were found (purpose of test)
- System up and quickly running
- Accountability factor – ties a person to an item, higher level of accountability with the appearance of computers, cards, etc.
- Cache return process very efficient
- User friendly
- Being able to produce issue reports for resources that are staying with a Type 3 organization

What Can We do Better?

A number of bugs were found and enhancements suggested on this incident as follows:

- Option to print the shopping cart upon save. This will allow for verification of items checked out by the recipient and/or for line orders where the recipient is not there and communication is required to receive a receipt from the recipient that the items were received. (Planned for I-Suite Version 12.0)
- Change the issue report or add an additional report that has two additional columns (Return Quantity and Outstanding Quantity). The dollars would be based on the outstanding quantity. This report would also be helpful by location or by item.
- Selecting multiple copies to print does not work when printing reports from I-Suite. It does work outside I-Suite, so the issue is not the printer settings, but application settings.
- Need a report for reconciliation purposes that will show Received, Issued, Returned, and Balance. This could be used at the end of the incident to evaluate the accuracy of the ICBS import, issued supplies, and resulting inventory at the end of the incident.
- Desire to be able to use Excel to analyze data or create custom reports. While existing reports can be pulled into Excel, it would be good to have a data type report for loading into Excel. This may exist through custom reports.
- Create a cost report for use by the Cost Unit Leader to estimate costs. This is a temporary measure to suffice until a link between Supply and Cost Modules can be developed. The report would either show the detail below or be just a total dollar roll up of cost by the three categories:
    - Category (Consumable, Durable, or Trackable)
    - QTY issued
    - QTY returned
    - Outstanding QTY
    - Price
    - Total cost of issues
- Could not print the Return to Cache reports without installing Azalea software
- Screen sizing and viewability. There are two suggestions here:
    - Provide equipment with larger screens to allow for the increase of font sizes

    - Glare free screens
- Set up standard order items that will populate an order with a number of NFES items. An example is a 1000 foot hose lay, which includes a number of standard equipment. This will save time filling orders.
- Smartbook adjustment on gas cans. Item 0265 in the book as a safety can is not utilized anymore and should be removed. Item 0606 is actually the safety can that is used. The word Jeri should be removed from item 0606. At issue is the price of items 0265= $8+ and 0606= $90+ which is the correct valuation of the can.
- The rates appear to be 2009 rates in the 2010 system. It is critical for valuation that current year rates are used.
- Ability to enter more data for accountable property that shows on the report, like the location of the item (lat and long). The remarks field could be used for this, but it is not editable after an item is assigned and property moves around.
- Print labels for use with T cards
- There were issues denoted with the cache download accuracy. A couple of specifics are:
    - Yurts 0549 and generators did not come in with property numbers. They were entered with property numbers and when the yurt barcode was scanned, the correct yurt with property number showed up.
    - Sleeping bags all came in under one NFES number when in actuality they were split. Accountable property received did not match the electronic inventory. A couple of items were missing.
    - A wye and a gas can each came in with a pump property number.
- Transfer within incident only allows transferring trackable items. There is a fair amount of transfer of items and it would be nice if any item could be transferred. An example would be items checked out to the Helibase where they are held and then transferred to the line at a later date.
- No ability to edit a property item. For example wanting to enter remarks to an issue after it is saved.
- Error running reports…items currently issued…unknown application error and then report comes up when previewing. Other reports run without issue. This was just on one computer and reinstalling the reports and Azalea corrected the issue.
- When selecting an item from the return report barcode and in the permanent return area, it would be efficient to open up the Return window. Currently it just highlights the item and the user has to then click on Select.
- While the Return report has RFI and NRFI on it, the system does not allow differentiating on the condition of the return. In general, the system allows collecting RFI versus NRFI information, but it did not seem to utilize that information (when items are returned to the cache).
- Several barcodes on trackable property (pumps) would not read with the scanner, even though were in the inventory. The boxes were older than the rest of the pump boxes.
- In the Demob Module, the Supply checkbox on the checkout form is not driven by the presence of supplies. The checkbox should only default to ‘checked’ if non-consumable supplies are still checked out. It is always checked on the current checkout form.

Closeout

Jeff had the opportunity to meet Paul Summerfelt, Incident Commander, and go through the Barcode process. Additionally, Jeff expressed our appreciation to him and all involved IMT members for participating in the pilot.

On April 11, all network, computer, and barcode equipment installed for the pilot was taken down and re-boxed. Refurbishment of the kit was completed by the Pilot Team. The barcode kit was included with the last return shipment to the Rocky Mountain Fire Cache.

Jarhead Incident
Pilot Start: May 2
Pilot End: May 13

On May 1, Southwest Area Type 1 IMT Hughes was mobilized to the Jarhead Incident, Big Cypress National Reserve in Florida. Jeff Park received a call at 1300 hours on May 1 to implement the barcode project and was onsite by 2100 on May 2. The kit was repositioned from Texas. Due to shipping delays the kit did not arrive until 1330 on May 4th.

Supply was set up about 150 feet from a connection to the I-Suite server. This required the use of the EnGenuis wireless system. There was an issue with the setup of the EnGenuis as encryption was turned on at the access point, but off on the client bridge. The IMT was using a 165.83.99.x network configuration with DHCP. Scanners did not work out of the box and had to be reset using the setup documentation for the LS 3578 scanners. As this document was not available at the start of the incident some difficulties were incurred. The barcodes on the setup page that comes with the scanners was unsuccessful in resetting the scanners. For the most part the scanners were solid once set up. Used I-Suite Version Beta 5 2010.

The IMT readily agreed to go fully automated and no paper records were kept. The exceptions were early issues and as a backup system. T-Cards continued to be utilized and were entered into the application. Training of the Supply Unit personnel went well. A lead was selected for the camp crew. The individual was in a computer training program and was quite knowledgeable and had no issue grasping the system quickly.

Due to delays in getting the kit and the initial setup of a kit that had not been used, the Supply Unit was in operations for two operational periods before the system came up. Quite a few manual issues were completed in this timeframe. However all those issues were completed in the system within a few hours. Barcode operations were set up in the cache van to provide cover from the elements.

The IMT was very supportive of the pilot. The decision was made to not track most consumables in the system, like batteries, gloves, etc. The ICBS Shipping List imports were tested and ran successfully. However the imports were found to be incomplete. None of the accountable property came in the imports and what did come in was only a small portion of the cache van. All property items had to be manually entered.

On the second full day of the barcode implementation, Supply Unit personnel were operating mostly independent of the Pilot Team and figuring out roadblocks or questions on their own.

Jeff Park left the incident on May 7. On May 9, Jeff received a call from the RCDM that the team would be turning the incident over to the local unit on May 13. Gina Bald was called to travel to the incident to help with Release to Cache Waybills and to refurbish the Barcode Kit. Gina traveled to the incident on May 11. Upon arrival, it was discovered that the incident was having problems with the Advanced Search function on Release Permanent. (**Fixed in Version 11.0**) As a result of the problem, it was faster for the incident to handwrite the Waybills. As a test, Gina produced automated waybills to test the functionality.

Lessons Learned

<u>Notable Successes at this Incident</u>

- The Supply Unit went paperless for Issues/Returns from the beginning of the incident
- The Wireless Networking Equipment worked very well following setup issues
- The IMT was very accommodating in providing CTSP support and shelter to continue operations of the electronic equipment
- The Pilot continues to illustrate the fact that if barcoding is fully implemented in the future, an additional CTSP will be need to help in the Supply Unit for setup and support
- The Camp Crew quickly learned the Supply Module and needed very little support after Day 2

- The Lessons Learned from previous assignments aided in debugging set up issues
- Briefing the Camp Crew and Receiving and Distribution Managers upon arrival was instrumental in them taking ownership
- The catch up of entering manual issues into the system went smoothly and despite the delay in going live, catch up went quite seamlessly
- Finance and Demob were included in discussions of the Supply Module and were very interested and excited in the new information available to them.

Limitations or Special Needs at this Incident

- The network was utilizing a NPS system and had a limited number of IP addresses. Thus the printer was not networked, but connected via a USB cable to one of the computers. Unsuccessful in sharing that printer, so all printing was done on one laptop.
- This IMT does not use waybills for line issues, etc., so had no use for the waybill printing process
- The Barcode kit equipment was configured for a 10.10 setup and had to be reconfigured to a 165.183.99.x network. Documentation previously created helped in making setup go more smoothly. However, encryption was turned on at the access point, but off on the client bridge.
- The incident was operating over Remote Desktop. This methodology did not work with the scanners, so a local version of I-Suite was utilized.

After Action Review (AAR)

Brief conversations with the LSC and SPUL indicated that the team was very happy with trying the Barcode Pilot and look forward to testing it again.

What Went Well

- The CTSP on this incident had a lot of input that would be good to consider. His comments are captured below.
- Testing of the setup of a new kit, right out of the box. While there were challenges, these were diminished by previous lessons learned.
- User friendly aspects of the application made the implementation process very smooth

What Can We do Better?

- May want to label kits with a "This Side Up" on the top or pack the case tighter. The kit came delivered by FedEx on end, and the contents were a mess, with the cards everywhere, including inside the printer. The laptops could have been damaged as they were floating around in the kit during transit.
- There were issues denoted with the cache download accuracy. Most items were not included in the download. There were no accountable property items, with property numbers.
- Place documentation on the I-Suite website to provide better support to the CTSP responsible for an incident once the pilot team leaves
- The CTSP made an excellent argument for use of thin client laptops with I-Suite installed on a flash SD card on the thin client device, then write protected. Points are they are cheaper, more reliable, do not require operating system updates, security updates, and will have a longer usable lifespan, etc. The technology was tested and I-Suite with scanners worked without issue.

Key Setup Information Specific for this Incident

Two laptops were set up on DHCP
The printer is attached to laptop #6 with a USB cable. It is not shared with the other computer.
The EnGenuis devices are set up with security code firepass and the following IP addresses:

Access Point 165.83.99.3
Client Bridge 165.83.99.4

Both contain Subnet mask 255.255.255.123.
Remote Desktop ID is Log99. The password would need to be reset if used. This was used to import shipments as they cannot be imported unless actually connected to the server.

Closeout

Additional bugs were found in the Supply Module that have been fixed in Version 11.0. The following items have been entered in Quality Center for inclusion in future Versions or a patch:

1. Replacement Report – Will show resources that have been issued Replacement Items.
2. Ability to delete a Pending Waybill (Fixed Patch 11-1)
3. Re-label Final Waybill box (Fixed Patch 11-1)
4. Expand ability to add/edit Supply Items
5. Fix Reports to include items without NFES Number (Fixed Patch 11-1)
6. Add ability to see Items at Incident on Inventory Screen (Fixed Patch 11-1)
7. Add ability to print Shopping Cart on Issue Screen (Fixed Patch 11-1)

The Barcode Kit was re-furbished at the incident. No supplies needed replacement. This kit was originally shipped from the Silver City Fire Cache. However, the decision was made to include it on the Mobile Cache Van that was being returned to the London Fire Cache and store it there until needed elsewhere. This saved the cost of shipping back to Silver City and pre-positioned a Barcode Kit in the Southern Area.

Duckett Incident
Pilot Start: June 16, 2011
Pilot End: June 24, 2011

On June 13, Rocky Mountain Area Type 2 IMT Pechota was mobilized to the Duckett Incident on the Pike/San Isabel NF. Pilot Team member mobilized was limited to Jeff Park. Jeff received a call to implement the bar code project on June 14, but was unable to respond until the 16th 1430 hours. The kit was ordered from the Rocky Mountain Cache and arrived at ICP prior to Jeff's arrival.

Supply was set up less than 100 feet from the ordering trailer, which was already wired to the I-Suite server. Supply Unit was able to wire directly into the hub in the ordering trailer. Start to finish setup of the barcode system was complete in 1 ½ hours. Scanners started up right out of the box and needed no additional setup. For the most part the scanners were solid for the whole incident. There were only a couple of times when equipment was moved or power lost that the scanners had to be powered down and reset using the kit instructions. In each case, following the instructions resulted in the scanners coming back up. I-Suite Version 2011.1 was used.

After a thorough discussion, the IMT agreed to go fully automated and no paper records were kept. The exception was early issues and as a backup system when the power failed (which did happen one or two times). Training of Supply Receiving and Distribution personnel, as well as two camp crew members from the BIA Uma Camp Crew, was accomplished within two hours of arrival. There were significant supply issues prior to the system coming up. This proved to be a challenge to catch up as there were issue sheets and memos that all needed to be entered. Two camp crew members were able to accomplish this the morning following Jeff's arrival and from that point on all was paper free.

Eric Simmons, CTSP, provided excellent assistance. The IMT was skeptical at first but very supportive of the pilot effort. Their skepticism gradually diminished and they fully embraced the process. The ICBS Shipping List imports ran successfully. On the first full day of the barcode implementation, Supply Unit personnel were operating mostly independent of the Pilot Team and figuring out roadblocks or questions on their own. On June

19-24, returns to the Rocky Mountain Fire Cache were entered and automated Release to Cache Waybills created. The IMT was very happy with the waybill process for sending a shipment back to the cache. Some items were not on the cache list and some property number were assigned to things like gas cans but overall the process was very smooth. By design the initial cache van does not come with any property numbers from the Cache. Additionally there is an add-on to the initial cache van of an 8648. The property numbers do not come in for this either. This leaves two pumps, two chain saws, and two generators on the initial cache van that come in without property numbers.

Lessons Learned

Notable Successes at this Incident

- The setup time was reduced to 1 ½ hours partly based on lessons learned and experience

Limitations or Special Needs at this Incident

- Firewall settings for the server were changed the morning of June 19 causing loss of connection. This was due to a virus attack on the server. This was corrected by the CTSP.
- The system, despite being wired, was very slow on this incident. Some changes were made by the CTSP related to assigning IP addresses and the system returned to normal speed.

After Action Review (AAR)

Informal AARs were held with the Supply Unit Leader, R&D Managers, Logistics Section Chief, and CTSPs. The following comments were captured:

What Went Well

- The Pilot received good input and suggestions from IMT
- Suggestions were received and bugs were found (purpose of test)
- System up and running quickly
- Cache return process very efficient
- The thin client network was operating on DHCP and we were able to simply connect and go with all computers.

What Can We do Better?

- **Finalize Time Pop Up**—The pop up that indicates supplies are checked out when finalizing Time continues to pop up even when only consumables are checked out. This should only occur for durable and accountable items.
- **Quick Release**—When using quick issue for NFES items 1238, 1016, 00218, and a number of other items, the system did not allow a save as it said it wanted a property number. This did not happen on most items. We were able to scan the barcode in the book to enter these items. There were no property numbers assigned to 1238's but there were to 1016 and 00218. Unknown as to why these property numbers were assigned to non-property items. Every cache shipment was reviewed and there were no property numbers on non-property items. Additionally, the crew members handling issues were asked and they did not add them (they only had Supply Clerk access). The same issue was found in the quick screen for similar items.
- **Permanent Release** —Remarks is greyed out when initially selecting an item for release. If the item is edited after selected, remarks can be entered. However they do not save and there is no place for remarks on the waybill. Either remove the remarks or save them and show on the report (save and show preferred).
- **Permanent Release**—The accounting code selected on a permanent release waybill does not print on the waybill.
- **Permanent Release**—Reverse the order of the waybill display so the most current is at the top. Another option would be to force the curser to the last record when entering.

- **Return screen**—Remove request number and resource name from the items issued grid and show the issue date/time in this space. Date/Time is in the database but does not display.
- **Work Flow suggestion**—Enter order, hand customer a copy of the shopping cart printout (**Implemented Patch 11-1**), customer hands off printed shopping cart to supply crew member to fill. This would be excellent for complex orders, both to assist in filling and assuring what was entered into the system is actually issued.
- **Undo an issue**. Currently an item has to be returned which leaves an incorrect inventory trail behind. Undo would simply undo the issue.
- **Exchange**—Allow for an exchange on the return screen. This would accommodate returns and exchanges (like a shirt on one screen).
- **Report Addition**—Incident Order Summary Report to match the cache report of the same name. This was suggested in a previous trip report. Report is by cache item, sorted by NFES with columns for:
    - NFES #
    - Description
    - Received from Cache,
    - Issued out of I-Suite
    - Returned into I-Suite
    - Released back to cache
    - Total Remaining Inventory (split between RFI and NRFI)
    - The calculation would be Received – Issued + Returned – Released = Total Remaining
- **Report addition**—Items currently issued report, with option to exclude consumables.
- **Custom reports**—Not populated for Supply and a fatal runtime error is incurred when you enter that area.
- **Issuing Partial Units**—There is an issue with durable items when issuing less than the full unit of measure captured in the system. For example 0970 is a fence kit. If 5 posts are issued, return is wanted, but the system will only allow the issue of a whole kit. A work around is to create another item for fence post by the item, but then a cache inventory item is issued and does not reduce the inventory. Ideally, could issue a .5 or something less than one. It appears after discussion with the cache that this may be somewhat of a training issue to order what you want…for example stakes are available from the cache as a single item.
- **Issue Returns**—When going to the issue return screen or back and forth from Locations, the items issued are not populating into the screen to be returned. Additionally when selecting, a message pops up that accountable property is not included.
- **Property Items -** Pumps were allowed to be returned multiple time (one 6 times and another 2 times). This appears to be the issue on the property status report as property items returned to the cache still show. The inventory for the pump returned 6 times does show as 6.
- **Accountable** items can be issued, even after waybilled back to the Cache. Were able to issue the same pump twice. Need a check on items with a property number that do not allow a quantity except 0 or 1.
- **Issue to Demob**—System allows issue to demobed resources. When this occurred we were unable to return…even after undemobing the resource. (**Fixed in Patch 11-1**)
- **Property item** received, returned to Cache and then received back. System does not reflect the item coming back in inventory as it still shows released and none ready for issue.
- **Issue Return—**The exclude consumables checkbox does not exclude consumables.
- **Issue Return**—Allow a "return all as NRFI" or allow selecting multiple lines that are then presented one at a time to validate quantity.
- **Quantity below zero**—Consider a popup when issuing items that cause the inventory to drop below zero.
- **Numeric Keypad**—User was not using scanners much and simply entering the NFES # in the quick issue or search to pull up items. A numeric keypad would make operations more efficient.
- **Supplies Currently Issued report—**Sort is by request number but sorts only by the first number so for example sort like E-1, E-17, E-2, E-22, E-201…E-3, etc.

- **Column Widths—**Continues to be a big issue. Made worse by the fact that if scrolling, search, etc. to a certain point in the issue screen and then resize a column, the system bumps back to the top of the list.
- **Supply History—**Report does not have quantities for the history line release, which is the returns to cache. For this report to be complete it needs to have these quantities. May be an issue that the releases do not go in as RFI or NRFI, they are just a quantity.

Closeout

On June 24, all network, computer, and barcode equipment installed for the pilot was taken down and re-boxed. Refurbishment of the kit was completed by the Pilot Team. The barcode kit was included with the last return shipment to the Rocky Mountain Fire Cache.

High Cascades Incident
Pilot Start: August 26
Pilot End: September 6

On August 26, the Oregon-California (ORCA) Type 2 IMT was mobilized to the High Cascades Incident on the BIA Warm Springs Reservation. The Pilot Team arrived at ICP on August 27 and departed on August 30. Pilot Team members mobilized was limited to Jeff Park. Jeff remobilized on September 6 to handle the pilot shutdown. The kit was ordered from Northwest Area Cache and picked up on the way to the incident.

The Supply Unit was set about 175 feet from the I-Suite server and connection was established with a 100 foot and 75 foot cable, connected by a switch. This enabled a very fast setup. The scanners started up right out of the box and needed no additional setup. For the most part the scanners were solid for the whole incident. Used I-Suite Version 2011.1

After a thorough discussion, the IMT agreed to go fully automated and no paper records were kept. The exceptions were early issues and as a backup system when the power failed, which did happen one or two times. The training of Supply Unit personnel was challenging at first as one of the individuals provided by the Camp Crew to operate the computer had no computer skills and was not familiar with a mouse. He was swapped out and training improved from there. On the first full day of the barcode implementation, Supply Unit personnel were operating mostly independent of the Pilot Team and figuring out roadblocks or questions on their own.

Lessons Learned

<u>Notable Successes at this Incident</u>
- The setup time and complexity is significantly reduced where connection can be wired
- Training was provided to Finance personnel on the incident and they were very excited to partner with Supply in assuring that all property was accounted for and deductions issued, where appropriate.

<u>Limitations or Special Needs at this Incident</u>

The R&D lead for completing Waybills back to the Cache was not really interested in using the system to create the waybills. The truck was sent off to the Cache before the waybill could be completed for the first return, and the IMT did not contact Jeff to come back until all other return waybills had been completed. The cache was staying in place for the Type 3 organization, so there was still a significant Supply Unit in place when the system down was shutdown.

After Action Review (AAR)
Informal AARs were held with the Supply Unit Leader, R&D Managers, Logistics Section Chief, and CTSPs. All parties were very happy with the pilot and felt the system was very useful. One R&D manager indicated that he saw no use for the system prior to the incident, but was now thinking differently.

What Went Well
- The Pilot generally went smoothly and was well received
- The Supply Unit personnel were easily trained and very quickly adopted to the system

What Can We do Better?
- **ICBS Downloads**—When the initial cache downloads were completed, 4 of the 9 files indicated that they were not valid files. They were opened and they were indeed good files. Unknown as to why they were invalid. This has been observed on other incidents.
- **Accuracy of data entry**—When the IMT attempted to deduct for supplies not returned from contractors there was a significant amount of dispute over the items checked out and the IMT ended up fully discounting the system and not billing for items.
- **Deductions**—The suggestion was made to make a tighter link between items issued to contractors and deductions in the Time Module. Specifically, it was discussed adding a column in the cache catalog table that would have a checkmark for items that contractors were expected to supply and thus should be billed for if used and not returned, or possibly billed for just by using it, even if returned. There are a variety of ways this requirement could actually be implemented, with another option being a checkbox completed by supply once a contractor had checked out identifying items to charge. The bottom line here is that once a contractor got to Time for final payment, all documentation would be complete to support a deduction and the Time Unit could just process the deduction without having to jump through a bunch of time consuming hoops to validate what to do with supplies outstanding. A further enhancement would be to have I-Suite actually create a deduction once such deduction was approved by the Procurement Unit Leader or Supply.
- **Units of Issue**—This became an issue most specifically related to issues to contractors and possible billing, but would be a large issue if actually using the system to track available inventory. Various items are typically issued in smaller quantities than shown in the system. Batteries would be the most significant example.
- **Supply History Report**—Shows RFI and NRFI, however the report should be showing Issue and Return. This is a useful report, but needs tweaking to make sure the numbers are issue and return.

Closeout

On September 6, all network, computer, and barcode equipment installed for the pilot was taken down and re-boxed. Refurbishment of the kit was completed by the Pilot Team. The barcode kit was returned personally by Jeff to the Redmond Cache without the Engenius devices (Were being used on the Dollar Lake incident). These devices from the Dollar Lake kit were returned to complete that kit.

Dollar Lake Incident
Pilot Start: August 30
Pilot End: September 26

On August 29, Northwest Area Type 2 IMT West was mobilized to the Dollar Lake Incident on the Mount Hood NF. West's team started and finished the incident, but there was a mid-incident transition to Pendleton's Type 1 IMT. The Pilot Team initially arrived at ICP on August 30 and departed on September 2. Pilot Team members mobilized was limited to Jeff Park. Jeff remobilized for two team transitions and on September 24 to handle the pilot shut down. The kit was ordered from the Great Basin Cache in Boise and arrived at ICP on September 1.

Supply was set about 100 yards from the I-Suite server. Start to finish setup of the barcode system was complete in 1 ½ hours. The scanners started up right out of the box and needed no additional setup. For the most part the scanners were solid for the whole incident. Used I-Suite Beta Version 2011.1 and upgraded to Beta 14 on the last day of the incident.

After a thorough discussion the IMT agreed to go fully automated and no paper records were kept. The exceptions were early issues and as a backup system when the power failed, which did happen one or two times. The training of Supply Unit personnel, as well as two camp crew members from the Timberlake JCC, was accomplished quickly.

The ICBS Shipping List imports were not utilized on this incident. This was an unfortunate result of having a single CTSP on the incident with insufficient time to really support the pilot. On the first full day of the barcode implementation, Supply Unit personnel were operating mostly independent of the Pilot Team and figuring out roadblocks or questions on their own.

The EnGenuis wireless devices were set to 212.168.1.4 and .5. The Printer was set to .6 and the two laptops were set to .91 and .92. Initially the EnGenius system was used instead of the Cisco as the CTSP was using EnGenius and was familiar with the equipment. The EnGenuis were brought from the High Cascades incident since wired was being used there. The original IP addresses, as marked on the devices, were reset at the end of the incident.

Lessons Learned

Notable Successes at this Incident

- Returns to the Northwest Area Fire Cache were entered and automated Release to Cache Waybills created
- Successfully tested the wireless system without use of the client end of the EnGenius
- Attempted to connect to the wireless system set up in camp by the CTSP, but the signal was either not strong enough or had to much traffic to sustain a database connection from supply to the server
- The IMT had an extra Status Check-in Recorder and assigned that individual to Supply. As expected by the Pilot project, this worked excellently as the person was able to step in and handle supply check out/returns with ease. Additionally it put a person at the computer that wanted to be there and was comfortable in that role. Highly recommend creating a supply recorder that is trained in I-Suite and the Supply Unit.

Limitations or Special Needs at this Incident

- There were two team transitions on this incident and they did not go extremely smooth. Equipment changes and outages during transition caused significant challenges to the teams. Despite leaving contact info, Jeff was rarely contacted by the teams, even when things were not working correctly. As an example, Jeff received a call for clarification on waybill creation. The incident person was going to hang up but Jeff persisted in asking how things were going. At this point Jeff was told that the scanners had not been working for several days. This is an indicator of a lack of team understanding of what it takes to keep an application fully functional.
- There were at least 6 wireless networks functioning in and around camp. This caused much interference with the EnGenius system. A strong connection between the access point and client was not made. Based on recommendation from the CTSP , the client side was removed and broadcasted directly from the access point to the wireless laptops in Supply. This was successful, and while the connection was not strong, it was fairly solid. Drops of connection to the database were regular, but not overwhelming.
- Initially there was only one CTSP on this incident and the individual encountered a multitude of network issues that impacted the pilot. The most significant was on the evening of September 1 when the EnGenuis connection was hijacked by a Belkin wireless system and IP addresses were assigned over DHCP that were

inconsistent with the server. Once the issue was identified, IP's were hardcoded into the supply laptops to prevent this occurrence again.

After Action Review (AAR)

Informal AARs were held with the Supply Unit Leader, R&D Managers, Logistics Section Chief, and CTSPs. All parties felt that, despite some of the issues, the pilot was a success and that value added was imparted by the pilot system.

What Went Well

The Pilot had some glitches, but we managed to keep continuity despite two team transitions during the pilot test period.

What Can We do Better?

- **CTSP Support**—There was only one CTSP doing the initial setup and this was just not enough to provide adequate support to the pilot. If this were not a pilot, the operations of supply would have been significantly hampered. Future use of supply will require at least a two person CTSP team.
- **Accountable Property**—Manually received three NFES 0870 pumps. The accountable property report did not show the pumps as being issued to Division C, where issued. However the issue report for Division C did show three NFES 0870 pumps being issued. Unable to resolve, but it may be related to the fact that the database was not updated to remove the hazardous flag.
- **Edit of Inventory Quantity**—Related to the above issue, the system showed the accountable pumps above as still ready for issue. Tried to adjust the RFI number from 1 to 0. The system allowed the changed to be entered but would not save it.
- **Setup Process**—The setup process continues to be a complex challenge and setup that worked at one incident seems to not necessarily work out of the box at another. In this case the EnGenius Bridge did not function with a strong enough signal to keep the database connection.
- The Return Card menu option is only available on the Issue screen. There should be an option to return the card when on the Issue Return screen, since that is where the user is when returning the card.
- Screen functions, generally or always, pop to the top once a record is submitted or change made. Examples are the Issue Return screen. When returning an item, in a long list of items, it would be helpful if the system took you back to where you were when you returned an item….not back to the top of the list. This also occurs when you resize columns and it other areas.

Closeout

On September 26, all network, computer, and barcode equipment installed for the pilot was taken down and re-boxed. Refurbishment of the kit was completed by the Pilot Team. The barcode kit was included with the last return shipment to the Great Basin Cache.

Motor Incident

Pilot Start: August 27
Pilot End: September 2

On August 25, California Type 2 IMT Cooper was mobilized to the Motor Incident, Sierra National Forest. On August 26, Gina Bald called the South Zone Cache to ship the Barcode Kit with the next incident supply order. Per the Assistant Cache Manager, no orders had been received, but the kit would be put on the next order. The Pilot Team arrived at ICP on August 27 at 1400 and departed September 2 at 1000. Pilot Team members mobilized were Donna Tate and Gina Bald. ICP was established at Badger Pass Ski Resort at Yosemite National Park.

Upon arrival, the Supply Unit was being setup. There was no power, however a light tower generator was ordered. The Supply Unit was set up about 500 yards from a connection to the I-Suite server. Multiple tall pine trees blocked a clear line of sight. Cross Communications (contractor resource to provide communications) had NanoStation2 Wireless bridges similar to our Engenius equipment installed. The access point was installed on the Communication Trailer telescopic pole and the bridge was installed on a snow pole next to the Supply Unit. The two devices successfully communicated with each other.

The Barcode Kit arrived late on August 27, so it was decided to wait until the next day to setup the equipment in Supply. The scanners were charged and laptops updated with I-Suite Version 11.0 to be ready for the next day's setup. The incident was using a 10.10.10.xx IP address schema. The Cross Communications Technician did not know the IP address for the NanoStation2 Equipment to configure to work on the incident network. As a result, it was decided to use the Engenius equipment. Proceeded to install the Engenius equipment assuming that the IP addresses were the same as labeled on the devices:

- Access Point 10.10.10.5
- Client 10.10.10.6

After much unsuccessful troubleshooting to get the two devices to ping each other, Jeff Park was contacted to see if the IP addresses had been changed when used on the last incident (Jarhead)for this kit. Jeff could not remember, so we looked at the Jarhead Incident Trip Report and it was documented that they had been changed to (and not changed back to the labeled IP addresses):

Access Point 165.83.99.3
Client Bridge 165.83.99.4
Both contain Subnet mask 255.255.255.123

With this new knowledge, the devices were configured back to the labeled IP addresses, the Subnet mask to 255.0.0.0, and the Gateway to 0.0.0.0. The devices then successfully pinged each other. Then proceeded to mount the Engenius Access Point on the Communications Trailer pole and Supply Unit snow pole (removed the NanoStation2 devices). Once the devices were mounted, we were unable to have the devices ping each other due to the weak line of sight previously mentioned. We knew that the NanoStation2 devices worked, but as mentioned before, the Communications Technician did not know the default IP address in order to work on the incident network. Donna researched and found documentation online that contained the default IP address and configuration instructions. We were then able to configure the devices to 10.10.10.5 and .6. and have them ping each other. The NanoStation devices are newer technology and have a stronger signal than the Engenius devices. We mounted them in the above mentioned locations and had communication with the I-Suite server. A Light Tower generator was used as power for the computers. It was now Sunday afternoon and the scanners and laptops were setup. We were ready to begin training the Camp Crew.

Due to delays in getting the kit and the initial setup of the networking equipment, the Supply Unit was in operations for one operational period before the system came up. The IMT collected supply issue information on General Message forms until the system was ready. Once the automated process was working, General Message forms were no longer used and the IMT decided to go fully automated. The only exception would be if the computers or generators went down.

Training of the Camp Crew went well. Four Camp Crew Members were trained and they took over. Information from the General Message forms was entered. The IMT was very supportive of the pilot. Decision was made to track consumable items in the system, like batteries, gloves, etc. The RCDM wanted to track clothing exchanges in I-Suite. This was tried the first shift and it slowed down the exchange process due to having to look up the size that returned items were being exchanged with. The Supply Unit Leader observed the long lines in the morning due to this process and expressed concern. We explained the reason for the

slowness. After talking with the RCDM, it was decided that clothing and gloves exchanges would not be entered into the system. The Supply Unit Leader was notified of this business process change. Exchange items other than clothing and gloves were successfully transacted in the system. Replacements were successfully transacted in the system. Line Orders were entered into the system. The ICBS Shipping List imports were tested and ran successfully.

On the second full day of the barcode implementation, Supply Unit personnel were operating mostly independent of the Pilot Team and figuring out roadblocks or questions on their own. The RCDM successfully used the Release to Cache Waybills and was very happy with the ease of use and the timesaving versus manually completing the waybills. He is a CalFire employee and has decided to use I-Suite for his Release to Cache Waybills on CalFire incidents.

Lessons Learned

Notable Successes at this Incident

- Antonio Gonzales and Stan Horst from Cross Communications were extremely helpful in troubleshooting the networking equipment
- The Supply Unit was very accommodating to the Barcode Pilot Team
- The Supply Unit went paperless for Issues/Returns from the beginning of the incident
- The Wireless Networking Equipment worked very well following setup issues after determining the correct IP addresses
- There were no scanner issues on this incident
- The Supply Unit was located in a parking lot so there was not a lot of dirt and dust. This enabled the equipment to stay fairly clean.
- The Camp Crew quickly learned the Supply Module and needed very little support after Day 2
- The Lessons Learned from previous assignments aided in debugging set up issues
- Briefing the Camp Crew and Receiving and Distribution Managers upon arrival was instrumental in them taking ownership
- The catch up of entering manual issues into the system went smoothly and despite the delay in going live, we were able to catch up quite seamlessly

Limitations or Special Needs at this Incident

- The Pilot continues to illustrate the fact that if barcoding is fully implemented, an additional CTSP will be need to help in the Supply Unit for setup and support
- The Supply unit needs to be located within line of sight of the I-Suite Server. Due to this limitation, there were may lost connections to the database.
- Recommend to not track clothing exchanges since it slows down the process in searching for clothing sizes
- If networking equipment configurations are changed on an incident, they need to be set back to the previous settings for the next incident. This is the responsibility of the Project Team.
- Supply Module Bugs continue to be found in reports and on the waybills. These have been documented in Quality Center for fixes.
- Not much accountable property was issued; therefore a thorough test was not completed on the fixes made in the latest application patch

After Action Review (AAR)

A formal AAR was not held with the team. However, individual conversations were held with the Supply Unit Leader and Logistics Section Chief. The Supply Unit leader was given examples of the reports that can be generated by I-Suite.

<u>Key Setup Information Specific for this Incident</u>
The EnGenuis devices were configured back to the previous settings:

- Access Point 10.10.10.5
- Client 10.10.10.6
- Subnetmask 255.0.0.0.0
- Gateway 0.0.0.0.

Closeout

Project Team departed on September 2. The Barcode Supply Kit was loaded on the last truck back to the Ontario Fire Cache. A copy of the Items Currently Issued Report for resources that were remaining on the incident was left for the local unit.

Future of Incident Barcodes

A discussion will be held with Sarah Fisher and Tory Henderson as to the future of incident barcodes. Follows are a few key items that need to be considered for success:

- National Support – A Business Group will need to 'Take On' the barcode project to potentially expand from the Supply Unit to other Sections/Units at the Incident
- IMT Commitment - IMTs need to commit to learning the system and supporting barcoding at the incident. As mentioned in the report, this requires additional personnel such as CTSPs, Supply Clerks, etc.
- Training – Incident personnel using barcoding at the incident need training to be successful
- Barcode on IQC/Red Card – Having a barcode on the IQC/Red Card with a resource's basic information such as Name and Unit ID would enhance barcoding at the incident
- Equipment – Scanners and barcode supplies (cards, Smartbooks, etc.) would need to be purchased, stored, and maintained