

# SPARKS

Strategic Parachute Accountability & Record Keeping System



## SPARKS Can Start a Fire!

Answers to an Accountability Problem



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## *The Times - They Aren't Changing*

**70 years!** The processes the parachute rigger goes through in the preparation, issue, record keeping and accountability has remained unchanged for over 70 years. With all the technological advancement in automation, riggers are still using the stubby pencil approach. With the need to track thousands of assets throughout a myriad of rigger facilities worldwide an automated system is required. What is needed is a system that efficiently supports asset tracking, inventory, maintenance and life cycle management. Such a system would interface with authoritative systems of record for maintenance and supply accountability and produce reports that streamline and enhance operations. What isn't needed is a system used by your grandfather.

## *The Conundrum*

Today's riggers are tech savvy – they grew up with cell phones, iPads, and tablets. This antiquated inventory process is labor and hour intensive, cannot account for a total number of parachutes issued and to what customer and still relies on spreadsheets to determine life cycle replacement.

**Overview** Packing a parachute hasn't changed that much over the years – unfortunately nor has the means in which we capture and record that process. The log record book is the sole source that tells the life history of that parachute from

*“Today's 21st Century Riggers are using same method their grandfather used”*

*“From iPads and Tablets back to stubby pencils”*

*“Spreadsheets and manual counting is still how it's done”*



*“Parachutes are now a CLVII item that must be tracked and reported”*

*“Item Manager knows the amount of parachutes issued, not by serial numbers”*

*“As far back as 1991 the Army has been looking for a solution”*

“cradle to grave”; however if that book is lost – the fix is to simply slap a new one on and write “new book” on its cover. Lost is all the maintenance, how many times it has been jumped/packed, who packed it and any directed modified work order.....all gone.

The item manager of these parachutes responsible for issue to rigger shops and paralofts worldwide has no tracking mechanism in which to follow the roadmap to that parachute’s destination. Sure they know the number of parachutes a unit receives but that’s about it.

Parachutes are now CLVII items which require operational readiness reporting. This change necessitates serial number tracking and reporting of maintenance actions to higher echelons. There is no system in place that follows key elements on thousands of assets distributed worldwide. Upper strata of all Army components are reporting blind because there is no system in place that efficiently supports asset tracking, inventory, maintenance and life cycle management. More often the using units rely on spreadsheets and formulas to determine when a parachute reaches its end-of-service life; trusting their calculations are correct.

This is not a new phenomenon, as far back as 1991 Natick Labs has been doing studies for the US Army to rectify this problem and obtain a solution. Here it is 2016, and I think you have the answer as to how that is working out. The time for discussion and studies has passed, it is time to “slap the table” and make a decision.



## ***Common Issues for Demographic***

- ❖ Accountability in the aerial delivery arena is a manual process currently; using spreadsheets or ledgers. While this method has been the backbone of accountability since its beginning, it is manpower intensive, requires strong time commitment, subject to human error and does not guarantee 100% chain-of-custody throughout the management process.
- ❖ Maintenance work orders use handwritten forms that are attached to the parachute. These forms can become lost and other than physically checking the individual log assigned to each parachute there is no automated way to determine date or repair trend analysis.
- ❖ Daily/Monthly pack data reports are hand generated after a manual count is performed. In the event of the need to locate a parachute either by individual packer, manufacturer, lot or serial number; this undertaking is both demanding in labor or exhaustive in time spent. In addition, to find this needle in a haystack all other actions are either stopped or stalled due to an all hands on deck effort.
- ❖ Currently no quick look data analysis to determine parachute(s) end-of-service life, due repacks, ready for issue, maintenance count or those parachutes that are issued.

*These are not isolated problems – this is a systemic issue throughout the entire airborne rigging community*

## ***So what's the big deal? - Why the Problem is Prevalent***

Riggers/packers deal with other people's lives. The Rigger Creed is "I Will Be Sure Always" and they deal with lifesaving equipment - does it make sense to be using this antiquated system? After a recent parachute fatality investigation, it was determined that the jumper was not current on the parachute he was using. While this was not the only contributing factor, it should give pause. There is no system in place to validate a jumper's currency.

*"A recent parachute fatality investigation determined the jumper was not current on the parachute he was jumping"*

There are no measures in place for higher HQ to track disposition of parachutes and number available. The process to distribute and transmit Safety of Use Messages (SOUM), Maintenance Advisory Messages (MAM), Modification Work Orders (MWO), Ground Precautionary Message (GPM) and Maintenance Information Messages (MI) is slow at best. The "shotgun blast" approach resembles more of a "buckshot scatter" as to the units receiving and acting upon them. In this day of budgetary restrictions the need to intelligently forecast for future purchase is reliant upon Excel spreadsheets – once again assuming the formulas are correct.

These problems are systemic in the military freefall arena as well. In this case we are dealing with higher performance canopies jumped at much higher altitudes. Margin for error is slim – why add non-accountability and inferior record keeping as a possible weak link to an already inherently dangerous business?

# *Introducing SPARKS – Strategic Parachute Accountability and Record Keeping System*



*SPARKS* is Web Based ASP.NET (C#) w/ SQL Server Database where each site operates on a closed Network. *Built for riggers – designed & developed with constant input and feedback from parachute riggers.*

Once approved for NIPR use, data from each site would synchronize to central server(s).



ASP.NET



*SPARKS* is a

product of Complete Parachute Solutions Inc., the world's leading provider of ram-air military parachuting equipment and military freefall training solutions. CPS is a consortium of the parachute equipment manufacturing companies *Performance Designs, United Parachute Technologies* and *Sun Path Products*. CPS' cutting-edge technologies



proprietary designs and patented products are used by all branches of the U.S. Armed Forces and our NATO allies.

*Robust Onsite Server*

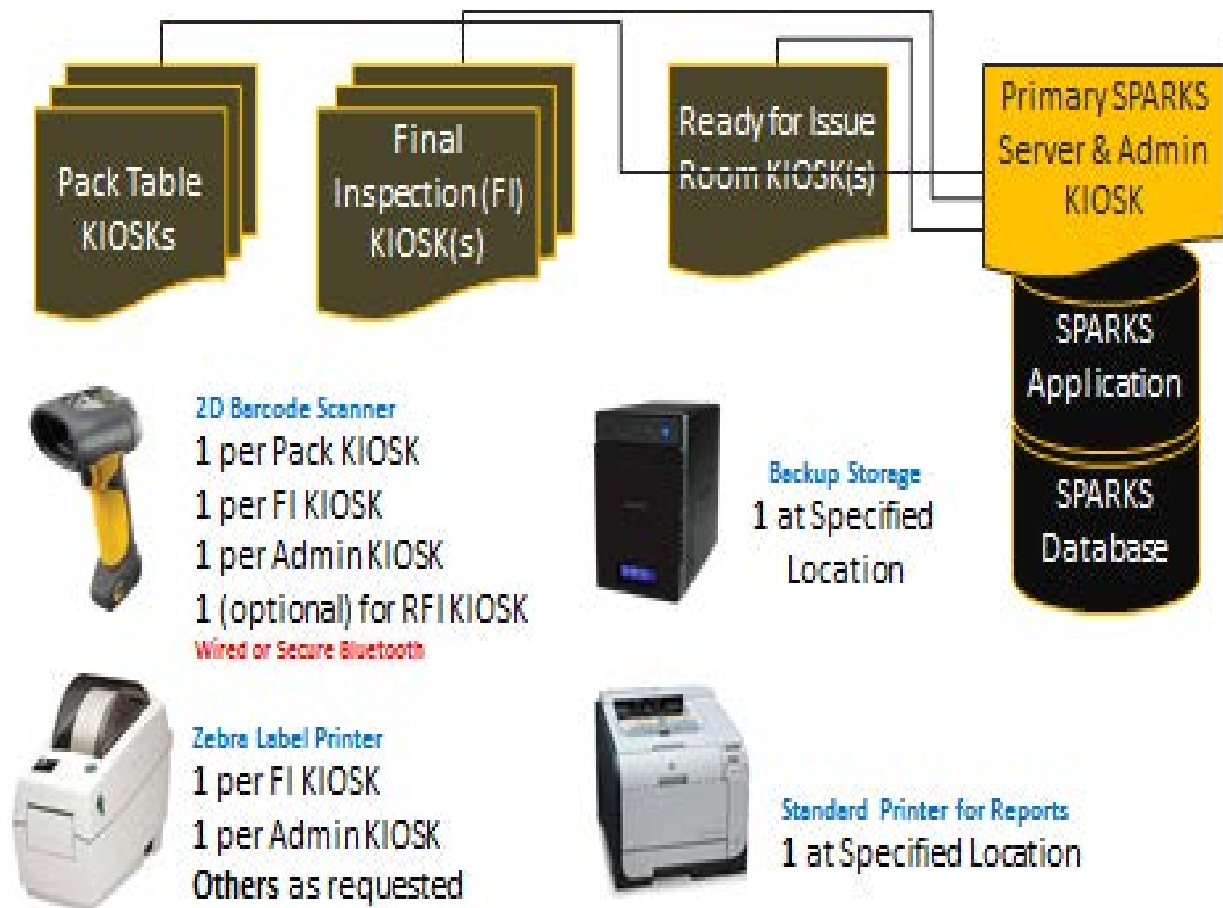
*Redundant Systems Backups*

*Table KIOSKs*

*Label Printing From Any KIOSK*

*Barcode Scanner*

# Typical System Composition





## *What was the kindling that sparked SPARKS?*

- Historical Information & Record Keeping Issues
  - Packing history and maintenance was captured manually and often illegibly
- Lack of Captured Maintenance
  - No mechanism in place to track parachute maintenance information
- Reporting
  - No system for reporting/tracking to higher HQs
  - Personnel data, pack history reports tediously accumulated
- Accountability and Tracking
  - No easy mechanism in place to locate or identify specific parachutes in the event of an incident, personnel issue, or SOUMs/MAMs other than search entire inventory
- Antiquated Regulatory Procedures and Efficiencies
  - Many government systems have evolved over time, nothing has been done for the rigger field.

*CPS identified a requirement and developed a solution*



Every problem the rigger community is facing that has been discussed to this point can be answered with SPARKS! Because it was designed by riggers, every imaginable scenerio has been covered – Record Keeping, Pack Logs, Inventory Tracking, Reporting, EVERYTHING for all types of parachutes and equipment.

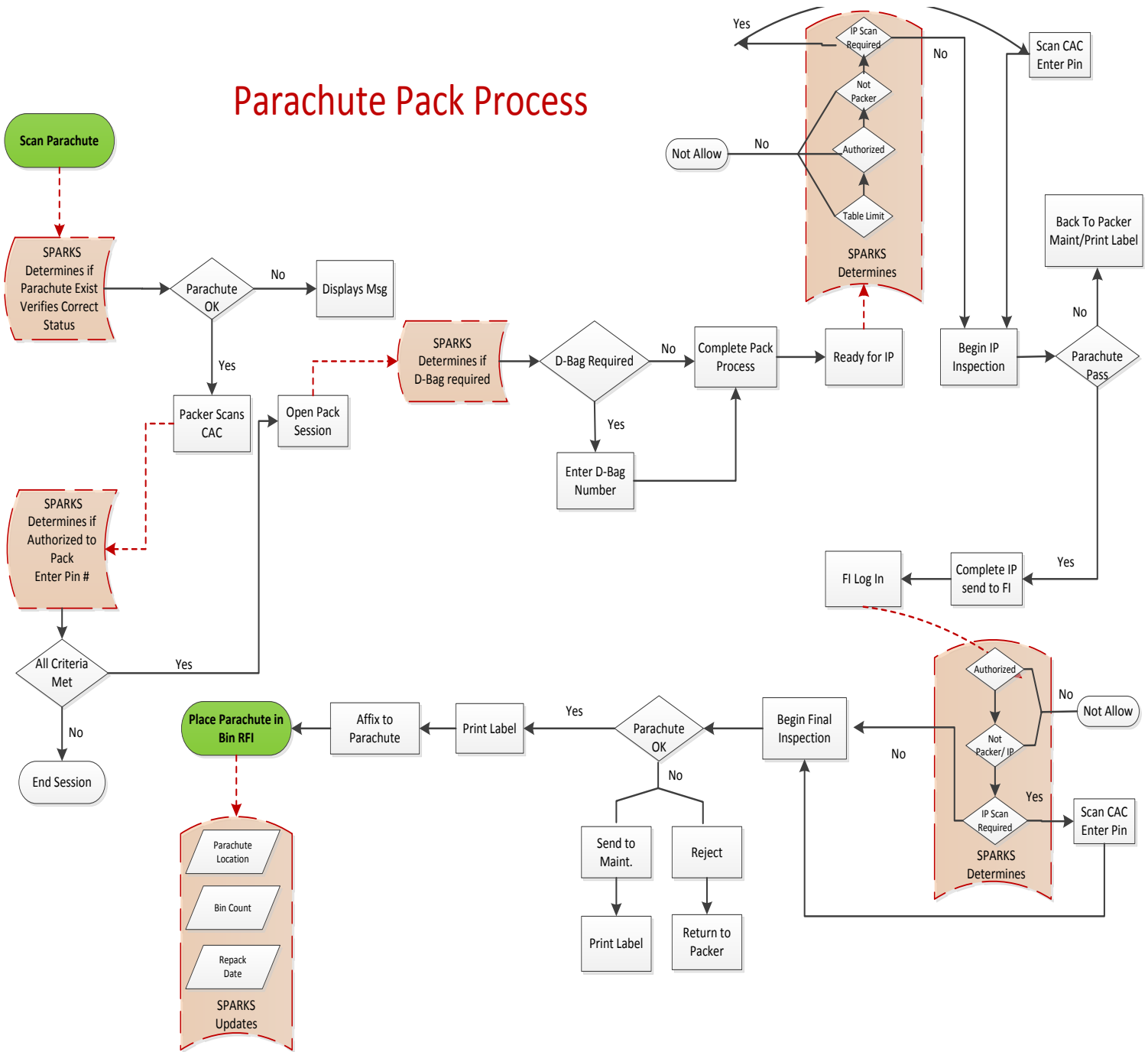
### ***Administrative Overview***

Each unit can manage a myriad of administrative functions. In addition, SPARKS is scalable for Item Managers and Higher HQs:

Fills Critical Capabilities Gap	Time Savings for Riggers	Increase Efficiency
Expedient Reporting and Vital Statics	Cost Savings – Maximizes Parachute Service Life	Enhanced Safety and Accountability
Decreased Research Time for SOUMS/MAMS/Incidents	Rapid Application – New Features as Feedback Received	Pack Reports – Automatically Populated
Inspection Reports	Personnel Data Reports	Provides Expedient Filtering
Completely Removes Manual Data Entry & Exhaustive Research	Personnel Evaluations more Accurate/Timely	Log Record Book no Longer Required

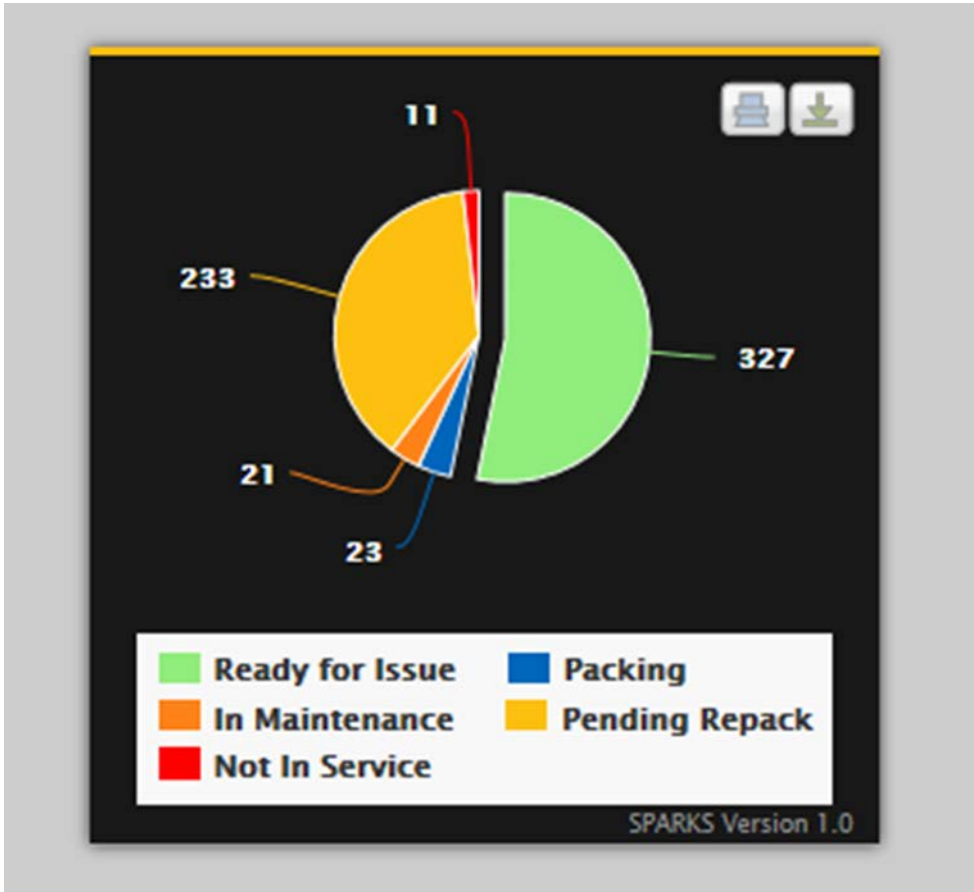
**SPARKS Provides Incredible Results, Many Are Unmeasurable, All Are Invaluable**

# Parachute Pack Process

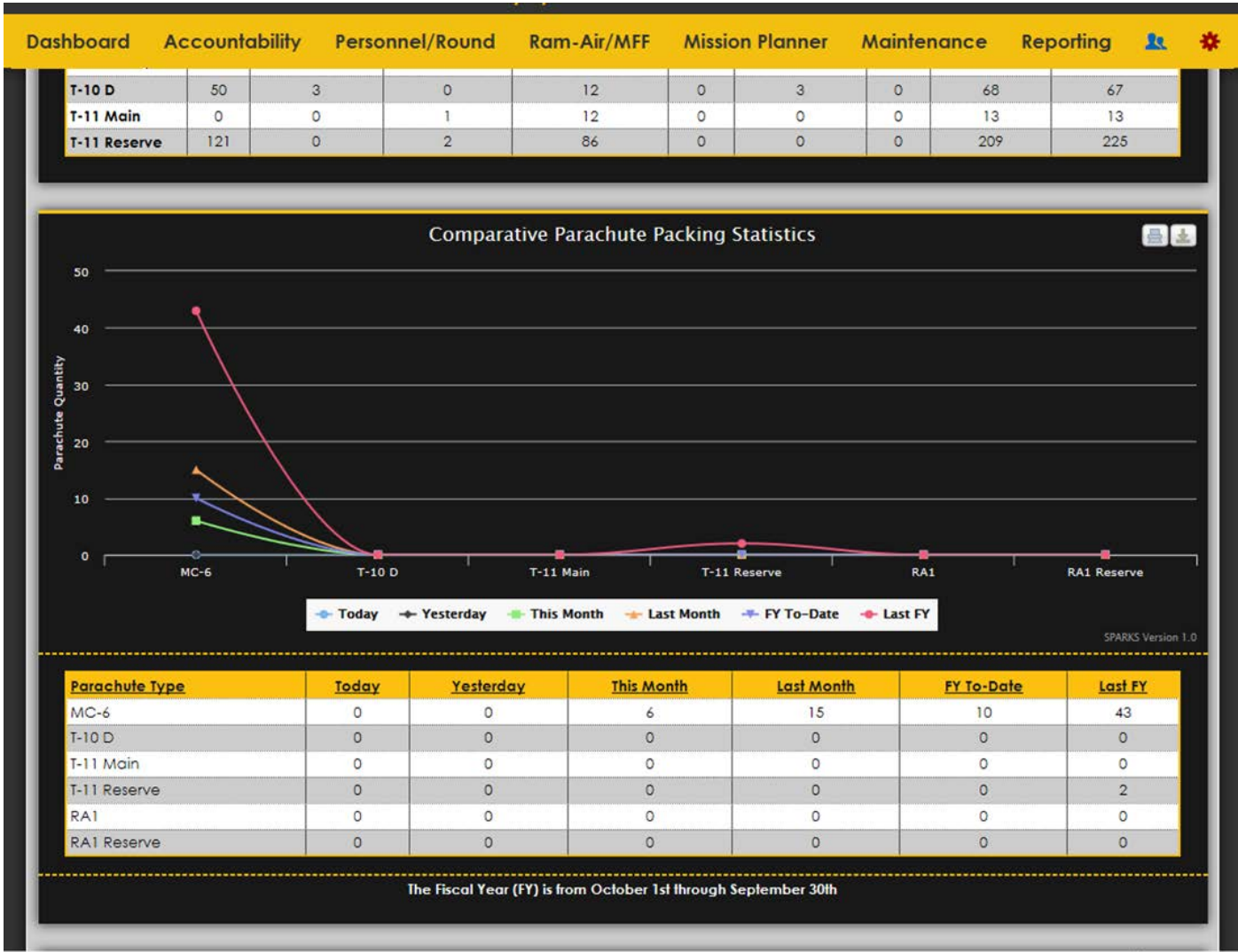


Throughout the entire pack process, SPARKS is validating qualifications, currencies, and permissions. It is a transparent process. SPARKS does not alter the means in which a parachute is packed – rather it captures data that until now has been manually captured at best or neglected at worst.

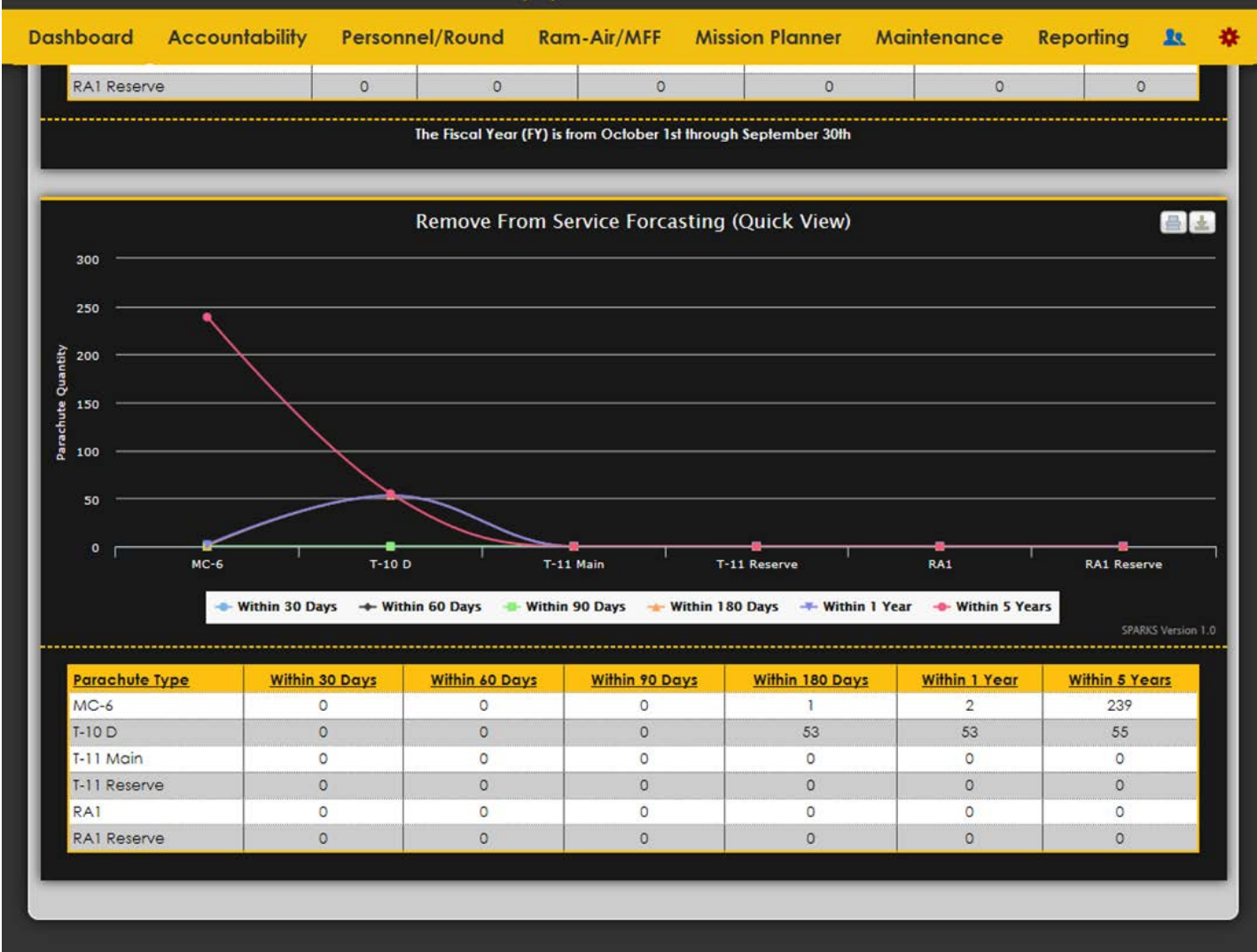
## *Paradise by the Dashboard Lights*



Up-to-date, at a glance – immediately identifies status of every parachute in the facility. Can be filtered by category – individually, in groups or as a whole. Can be exported to PowerPoint for briefings/presentations and reports.



Breaks parachute down by type and number packed – day, month, year to date and last year to date. Offers the capability to monitor trends in production. Easily accessible and offers export functions as well.



Up-to-date forecast of “remove from service” inventory. Provides for streamlined budgetary calculations and intelligent factual projections for future expenditures.

## ***THE FUTURE***

### ***Structured Advancement of System and Plan for Continual Improvement***

- ✓ CPS is pursuing connectivity options to directly query military property accountability systems
  - PBUSE (U.S. Army – Current system)
  - GCSS-A (U.S. Army – Future system)
  - SWALIS – (U.S. Navy)
- ✓ Track and issue/turn-in air items or durable property
- ✓ Manage expendable items
  - Packing material
  - Maintenance materials
  - Office supplies
- ✓ Higher level management of multiple sites utilizing SPARKS
- ✓ Asset visibility spread throughout multiple parachute packing facilities
- ✓ Reports for multiple units
- ✓ Track parachute rigger performance through multiple units
- ✓ Global positioning during airborne operations
- ✓ Ability to track currency of all jumpers prior to airborne operations
- ✓ Perform in depth maintenance functions
- ✓ Generation and management of maintenance forms. Create and manage alerts/notifications to KIOSKs by parachute type or manufacturer.

## ***THE FUTURE***

### ***Structured Advancement of System and Plan for Continual Improvement***

- ✓ Allow jumper “Self” Checkout and Packing
  - Operate under supervisory rigging personnel
  - Ability to check own proficiency with notification of refresher training
  - Jumpers pack own freefall Systems
- ✓ Allow management of MFF specific equipment
  - AADs
  - Altimeters
  - Oxygen Systems
  - Camera
- ✓ Component Bundling – issue of complete MFF systems using one barcode
- ✓ Capture parachute packing from remote drop zones utilizing mobile device
- ✓ Integration with CPS Parachute Jump Recorder

### ***Conclusion/Summary***

CPS has created a one of a kind system that fills a capabilities gap. At a minimum, in its current state, it offers a better than 80% solution to the existing problem. As far back as 1991 this has been debated. How many more studies are to be conducted before a decision is made? The ability for Item Managers and upper echelons to intelligently and accurately track inventory using modern technology is at hand and available. The time has come to surge the Parachute Rigging community into the 21<sup>st</sup> Century. SPARKS can light the fire that will transform the landscape.