

HOW LAYERED TECHNOLOGY  
SYSTEMS ENABLE A SMALL HPO  
TEAM TO DELIVER ON-TARGET  
MAINTENANCE PACKAGES FOR  
THE HUMAN WEAPON SYSTEM

# 2<sup>ND</sup> Air Support Operations Squadron



## 2<sup>ND</sup> AIR SUPPORT OPERATIONS SQUADRON:

HOW LAYERED TECHNOLOGY SYSTEMS  
ENABLE A SMALL HPO TEAM TO DELIVER  
ON-TARGET MAINTENANCE PACKAGES  
FOR THE HUMAN WEAPON SYSTEM



### ABOUT USAF 2<sup>ND</sup> ASOS

The United States Air Force's (Europe, USAFE) 2nd Air Support Operations Squadron (2nd ASOS) is a combat support unit located in Vilseck, Germany that provides tactical command and control of air power assets for combat operations. The 2nd ASOS is responsible for training, equipping, and maintaining the mission readiness of the Tactical Air Control

Party Operators (TACP). The 2nd ASOS Human Performance Optimization (HPO) team consists of an exercise physiologist and physical therapist who utilize a combination of technology and expertise to manage the health and preparation of the 2nd ASOS and provide additional support to several detachment units located throughout Europe.

## CHALLENGE

Stakes are high during deployments for TACP Operators. Their limited windows of time on base between deployments make it critical to maximize the impact of their recovery and preparation efforts.

The HPO team acts as the maintenance package for the human weapon system and their tune-ups must address recovery and preparation with pinpoint accuracy for each individual. To achieve this level of optimization, the team must be able to leverage a suite of technologies to objectively identify the specific physical needs of each Operator and address those needs at scale. The 2nd ASOS HPO team also plays the role of advising leadership in holistic mission preparation design, accentuating their need to clearly articulate data-driven recommendations for programmatic change. Major challenges the 2nd ASOS faced were:

### Quickly Identifying Individual Needs

The battery of assessments and technologies implemented need to have the capability to identify areas of individualization without wasting time executing lengthy protocols or data analysis that would delay actionability.

### Areas of individualization required include:

- Individual movement limiters
- Demands of different types of deployment
- Individual strength and fitness levels

### Individualized Programming at Scale

Individualization is a pillar of the 2nd ASOS' philosophy of optimizing readiness, but with an HPO team of two managing a high volume of Operators across multiple countries, personalization can seem like an unrealistic task.

### Learn, Adapt, Optimize

The HPO team was ultimately seeking iterative improvement to their operation. In addition to the ability to quickly and objectively assess Operators' Movement Health and physical capabilities, they needed access to deeper levels of raw and contextual data to enable further data exploration for innovation. Along with the role of the 2nd ASOS HPO team to advise leadership, they also require this capability to perform continuous internal research and validation to inform holistic program design.



**“...The Sparta Science data gives us a more powerful idea of metrics that relate to health and performance, and we saw that specifically in the pre- and post-deployment effects.”**

Dr. Chris Myers



## **SOLUTION**

The Exercise Physiologist at the 2nd ASOS, Dr. Chris Myers, has a Ph.D. in Kinesiology and extensive experience utilizing force plate technology as a researcher and practitioner. He was introduced to Sparta Science upon his arrival at the 2nd ASOS and recognized how the system’s capabilities could address his immediate challenges and long-term aspirations. With only small windows of face-to-face interaction with their Operators, Dr. Myers and his team

are now able to leverage the simple interface, data visualizations, and normative comparisons provided by the Sparta Movement Health Platform to collect immediate feedback and insights that inform individual optimization in real-time. The continuous accumulation of this data also generates a ‘data asset’ enabling Dr. Myers to simultaneously perform analyses, test hypotheses, and iteratively refine his team’s approach over time.

## Integrating Sparta Scans into the Battle Rhythm

To ensure successful implementation, a feasibility-based approach was established to integrate an assessment cadence into their existing battle rhythm. The primary goal was to utilize the Jump & Balance Scan every 30 days and/or pre-, post-, and 7-days post-deployment.

Multiple Sparta Scan systems were set up in the 2nd ASOS weight room, and systems were deployed at each detachment unit. While no HPO staff are deployed to detachment units, points of contact were identified and easily trained to collect scans so data could be utilized by the HPO team for remote management in the online platform in real-time.

The efficiency of the assessment process enabled the team to seamlessly administer assessments while on base allowing for quick identification of individuals' strengths, movement limiters, and meaningful changes from deployment. The team then put an emphasis on communicating the results to the Operators which further strengthened buy-in to the HPO program and overall compliance.

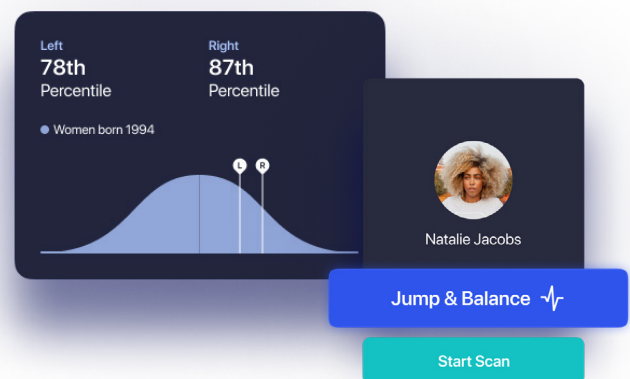
## Pragmatic Individualization

Dr. Myers was able to identify three distinct movement profiles that his Operators fell into using the primary Sparta Science metrics. These movement profiles highlighted the general strengths and limiters of the Operators and provided guidance for targeted interventions for improvement. The HPO team was able to leverage capabilities within TeamBuildr training software to create templates designed to address the general demands of the cohort while allowing them to plug in exercises to target the specific limiters of each movement profile group. This data-driven decision tree allowed them to provide highly individualized training templates across all units.

## Ongoing Refinement Behind the Scenes

The HPO team wanted to understand more about physical adaptations following training cycles and deployments to further optimize interventions, perform analyses, test hypotheses, and iteratively refine their approach over time. These insights are used to inform decisions with leadership to manage workloads and recovery during mission preparation. For example, the unique effects of different deployment cycles can be determined through longitudinal data analysis to better holistically inform program design.

The team is able to utilize both normalized and raw metrics to conduct ongoing analysis of pre- and post-deployment in parallel to ongoing standard operations. This allows them to further iterate their existing templates and build specific recovery routines to combat the negative impacts and return to baseline faster.



## Long Story Short...

Sparta Science provided a platform that helped the 2nd ASOS HPO team create a robust program to address multiple levels of individualized needs across geographies. With data-driven insights, the team was able to make interactive refinements addressing preparation and recovery with precision.

# IMPACT

## Optimized Preparation and Recovery

“The insights from the pre- and post-deployment analysis enabled us to make iterative adjustments to the recovery process and reduce return-to-baseline times to 7 days or less. Ultimately, it comes down to readiness, how many people are available for the mission, and how quickly can you rinse and repeat” said Dr. Myers. The team was able to design routines for Operators to complete during these times that now proactively combated the negative affects from deployments, thus lessening the impact and accelerating their return to baseline.

A contributing factor to readiness has been the ability to leverage data-driven insights from the battery of assessments to scale individualized training. This approach ensures that the team is consistently focused on the areas that will have the greatest impact.

**“Ultimately, it comes down to readiness, how many people are available for the mission, and how quickly can you rinse and repeat.”**

**Dr. Chris Myers**

“I was able to go away from one rep max and sub-max testing because the Sparta Science data gives us a more powerful idea of metrics that relate to health and performance and we saw that specifically in the pre- and post-deployment effects.”



## Data Informed Mission Preparation

“When communicating with leadership, I never assume they know what I’m talking about, so I always provide a background then present the data in a practical and easy to interpret format” Dr. Myers explained. “We then connect the dots and provide recommendations for command to consider during mission preparation. Command will ultimately make the final decisions and

it’s our job to provide valuable intel that can help optimize mission preparation.”

The HPO team is responsible for translating a complex maintenance package for Operators into a digestible briefing and recommendation

to Command. The Intelligence provided through the Sparta Science platform enables the HPO team to concisely convey a data-driven message that resonates.

This data-informed clarity increases buy-in from Command, granting the HPO team access to deeper levels of raw and contextual data to enable further data exploration for innovation and improved outcomes.



## SUMMARY

The United States Air Force's 2nd Air Support Operations Squadron needed to create a robust program to address multiple levels of individualized maintenance across geographies. Through the implementation of layered technology systems, including Sparta Science's Movement Health Platform, the HPO team created an efficient, scalable program trusted to serve TACP Operators in a high-stakes environment.


With data-driven insights, the team was able to make iterative refinements and address preparation and recovery within Operator's limited time frame. Individualized maintenance plans will keep Operators in action, and the data collected alerts the HPO team to possible concerns earlier.

In a combat environment, Operators and Command need to fully trust the processes in place. The HPO team put their trust in the Sparta Movement Health Platform and are now able to more efficiently deliver impactful maintenance packages across geographies with limited staff.

## TEAM

Dr. Chris Myers, Human  
Performance Optimization

Program Coordinator  
John Hill, Physical Therapist



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