

Quality Improvement in Hostile Environments

Lessons from Afghanistan & Bosnia

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November 2004

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Orion Canada Inc. Overview

- ◆ Specializing in lean and value-added management system solutions for mission critical systems and organizations



**First
ISO9000:2000
registration in
North America**





Quality Assurance on Scientific Research

Payload Quality for Space Shuttle STS107





**Deployed in
Afghanistan and Bosnia**

**Real Time Training
Services Combined
with Immediate
Impact Consulting**



Public Service Clients

- ◆ National Defence
- ◆ Fisheries & Oceans
- ◆ Foreign Affairs Canada
- ◆ Human Resources & Skills Development Canada
- ◆ Industry Canada
- ◆ Canadian Revenue Agency
- ◆ Canadian Space Agency
- ◆ European Space Agency
- ◆ And many others

Private Sector Clients

- ◆ Cisco Systems
- ◆ JDS Uniphase
- ◆ March Networks
- ◆ Metrophotronics
- ◆ SNC Lavalin
- ◆ IT, Telecom & SW
- ◆ Service Industry
- ◆ Printers, etc.
- ◆ WorldHeart
- ◆ BioMedica
- ◆ Biosign Research
- ◆ BJM Optics
- ◆ Millenium Biologix
- ◆ Taro
Pharmaceutical
Industries Ltd.
- ◆ And many others

Background

- ◆ Request for proposal from SNC Lavalin PAE for on-site consulting and training in process management, quality tools and risk management
- ◆ 1 consultant 2.5 weeks on site at Camp Julien, Afghanistan
- ◆ 1 consultant 10 days on site at TFK, Bosnia
- ◆ Consulting team liaise with Kingston before, during & after deployment
- ◆ Required “just-in-time” training with immediate real-time application of tools and methodologies

Challenges

- ◆ **To plan improvements without detailed knowledge of their processes**
- ◆ **To demonstrate measurable improvement and ROI quickly**
- ◆ **To establish improvements that are replicable in other theaters**
- ◆ **Conforming to a very detailed, DND Statement of Work (SOW)**
- ◆ **Working remotely with backup in Ottawa**
- ◆ **Evaluate and liaise with DND to improve metrics & evaluation scheme**

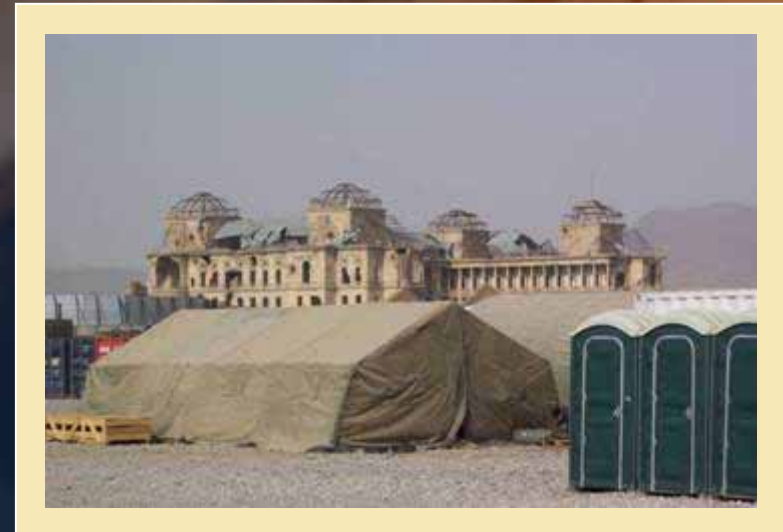
The environment

◆ Getting there

- Ottawa → Toronto → Amsterdam → Baku (Azerbaijan) → Kabul

◆ Environment

- - 10°C (or colder) in winter with snow
- > 60°C in the summer
- ~ 6500 feet above sea level
- Daily dust storms
- Accommodation in tents
- Equipment very short lifetime (laptop approx 9 – 12 months)



The environment

◆ Living there

- Max 2 beers per night!!!
- Excellent morale
- Lots of entertainment
- Positive working atmosphere
- Camp very well run

◆ Working there

- Work 6.5 days per week
- Approx 4 weeks holiday per 6 months
- Work with DND personnel, sometimes different outlook on how to do things



Project Planning

- ◆ **Review and understand SOW**
- ◆ **Define Training – immediate & next steps**
- ◆ **Lean ISO Type structure for documentation**
- ◆ **Define requirements for remote support**

Training

- ◆ **Orion Canada Inc provided on-site training for the following:**
 - **Process Mapping**
 - **Auditing Methods**
 - **Analysis Methods**
 - **Risk Analysis**
 - **Quality tools**



Training & Consulting Model



Stage 1 – Understanding Customer Requirements - Statement of Work

- ◆ **Understand and document processes for the following areas:**
 - **Management**
 - **Food Services**
 - **Material Distribution**
 - **Communication Information Services**
 - **Land Equipment Maintenance**
 - **Accommodation**
 - **Construction Engineering**
 - **Power supply & Distribution**
 - **Water Supply**
 - **Waste Management**
 - **Facilities**
 - **Roads & Grounds**
 - **Fire Services**
 - **Environment**

Stage 2 – Process Mapping

- ◆ **Deliver focused process mapping and analysis training**
- ◆ **Sit down with each functional manager & key staff to map 1st key process**
- ◆ **Mentor managers and staff to map rest of processes**
- ◆ **Optimize where appropriate**
- ◆ **Put into Lean ISO9000 type documentation**

Example process map

Step	Process	Category					
		O/T/I/D	Distance (m)	Time (mins)	People		Risk Limit
1	Spill Reported to environmental officer	Operation		2		15	<i>Monitor</i>
2	Contact Personnel	Operation		3			
3	Locate Truck	Delay		15		60	
4	Transport Crew To Spill Site	Transit		5		25	<i>Monitor</i>
5	Spill Assessment	Operation		5			
6	Remediation	Operation		240		530	<i>Monitor</i>
7	Report	Operation		120			<i>Monitor</i>

	Operation	Transport	Inspection	Delay	Totals
Distance Summary	0	0	0	0	0
	0%	0%	0%	0%	
Time Summary	370	5	0	15	390
	95%	1%	0%	4%	
People Summary	0	0	0	0	0
	0%	0%	0%	0%	

Targets	Actual	Maximum
3.19.4 3 & 4 Respond to Spill Reporting within 15 minutes: steps 1 - 4	25	103
3.19.4 1 All spills reported through central point of contact: step 1 3.19.4 2 Spill Report to be generated within 24 hours	6.5	12.63

Documentation – front cover

Title: Environmental services emergency spill response	
SOP number:	Rev:
Author:	Date:

Approvals (if only 1 approval then insert N/A for second name):

Name:	Signature:	Date:
Name:	Signature:	Date:

Purpose and Scope This SOP covers all aspects of environmental services spill response The scope of this SOP is all environmental services spill response for TFK	Definitions Insert any definitions of e.g. acronyms or calculations
References References to any other SOP's, requirements, specifications, standards etc	Records List all the places where you record your information

Revision history:		
#	Date	Reason for revision update
00		Release of a new document

Example SOP – body & detail

#	Process Step	Description	Responsibility
1	Spill Reported to environmental officer	Detail	
2	Contact Personnel	Detail	
3	Locate Truck	Detail	
4	Transport Crew To Spill Site	Detail	
5	Spill Assessment	Detail	
6	Remediation	Detail	
7	Report	Detail	

PM & SOP completed during Afghanistan deployment

◆ Environmental Services:

- Emergency spill response
- Environmental studies
- Environmental services

◆ Fire Services:

- Emergency operations & investigation
- Respiratory apparatus

◆ Food Services

- Box lunches

PM & SOP completed during Afghanistan deployment

◆ Management infrastructure

- Financial control
- HR reporting
- Management review
- HR recruitment
- HR retraining
- Financial budgeting

◆ Quality Assurance

- Internal Audit
- Process Mapping
- Sampling
- Corrective & preventative action

Immediate impact

- ◆ **Standardized processes for training**
- ◆ **These sent to Kingston for use in pre-deployment training**
- ◆ **Optimized key processes**
- ◆ **Identified areas of the SOW that were not relevant**
- ◆ **Identified areas of improvement**
- ◆ **Implemented key performance indicators**

Training & Consulting Model



On-site next steps – stages 3 & 4

- ◆ Look at key (now optimized) processes and risk manage
- ◆ On-site training cover risk management – one key tool use process FMEA
- ◆ Once SNCL understands areas of risk associated with key processes then introduce quality tools e.g.
 - Pre-control charts
 - Mistake proofing
 - Etc

Success factors

- ◆ **Keep the training very simple and real**
- ◆ **Immediately implement techniques learned in training**
- ◆ **Take more info than required – prepared for any circumstance**
- ◆ **Mentoring model works**
- ◆ **Always be enthusiastic, easy for people to get sidetracked**

Next Steps

- ◆ **Bosnia now shutting down**
- ◆ **Between Afghanistan & Bosnia now have set of documented best practice SOP's**
- ◆ **Use these for pre-deployment training**
- ◆ **Available for new deployments in other parts of the world**

Questions? Feedback?

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