Introduction of the operation of hazardous cargo containers at Shanghai Port

Speaker: QI Ming

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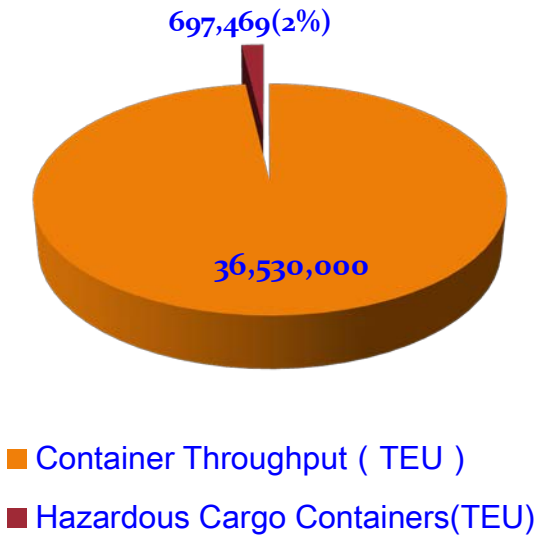
Ⅰ. General Introduction of operation of hazardous cargo containers at Shanghai Port



category	volume（TEU）	percentage%
1	96749	13.87
2.1	17477	2.51
2.2	28307	4.06
2.3	2855	0.41
5.1	15092	2.16
5.2	5260	0.75
6.1	60730	8.71
7	239	0.03

Ⅱ. Main operation types of hazardous cargo containers

1、Operation type in terminals

Inbound Operation

QC unloading → Transportation → RTG handling → Storage → Retrieval

Outbound Operation

Delivery → Storage → RTG handling → Transportation → QC loading

Ⅱ. Main operation types of hazardous cargo containers

2、Operation type outside of the terminal

- **Storage**
  - Warehouses
  - Container yards
- **Packing & unpacking**
  - **The most dangerous section**

Ⅱ. Main operation types of hazardous cargo containers

3、Main transportation modes

- Road Transportation
- Water Transportation

Ⅲ. Safety Management of hazardous cargo containers

The operation of hazardous cargo containers at Shanghai Port is introduced as follow.

3.1,Foundation of hazardous cargos database

281 specific standards and requirements

Characteristics and safety measures of 2,929 domestic hazardous chemicals

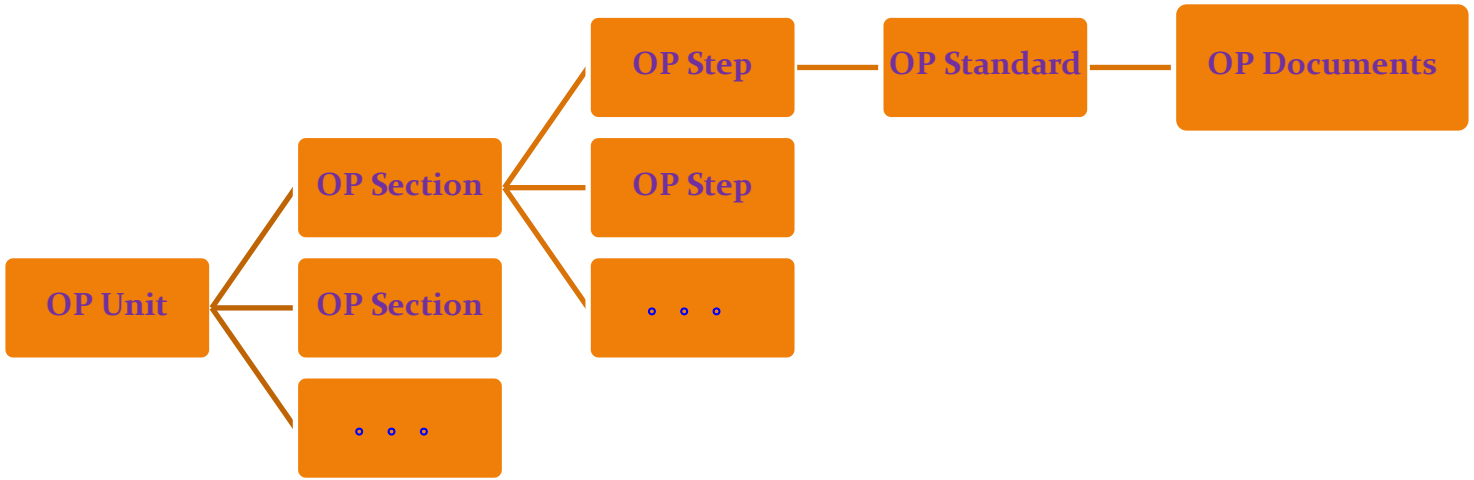
Includes all the international, domestic, local and industrial laws, regulations, standards, operation codes as well as internal regulations and industry experience

Cargos as well as emergency measures of UN coded hazardous cargos from DG2010 Chemical Rescue Measures

553 specific standards and requirements of technical protection and operation facilities according to 1,839 classes of UN coded hazardous cargos

Operation requirements, cautions, procedures, tools, emergency supplies of various hazardous cargos clarified

3.2, Establishment of the “information platform of safety management of hazardous cargos”



3.3,Operation Documents Generation (Operation Plan, Operation Instruction, Worksite Checking Form）

Information platform of safety management of hazardous cargos

Input UN code, cargo name

- Operation Plan
- Operation Instruction
- Worksite Checking Form

Operation Plan for the Hazardous Cargos Warehouse III at Lucao Port

Date：2016-03-04 Planner's signature:

No.	Container No.	Container type	Dock	Vessel name	voyage	Container owner	Danger category	Danger subcategory	Storage location	Danger code	Custom seal	Opening time	Package class	Cargo situation
1	TRHU3120288	20GP	明东	南星开拓	0120B	NS	2.3		F239021					
2														
3														

3.3.2,Digital information

UN1017 Operation Instruction

危类（主/次）	危规编号	货物特性	
2.3/8	1017		
参考中文品名			
氯气			

包装形式	货物积载情况	（场/库）箱位	作业过程	
0.75M3以下的钢瓶	货物包装完好		箱到库	
通风要求	作业日期	开箱时间	作业开始时间	作业完工时间
45分钟				

作业配备		
	人员配备	库场管理人员一名、装卸司机一名、装卸工两名
	工索具配备	专用坡道板、钢瓶专用铲架、货盘版、木契块、紧固绳
	机械配备	铲车
	劳防应急用品	安全帽、反光背心、防静电工作服、防穿刺工作鞋

作业注意事项

人员配备-工作经验：库场管理员 3年，司机 6年，装卸工 3年
装卸机械、工索具配备：铲车及工索具降低负荷25%
个人劳防用品、应急用品配备：全面罩防毒面具，橡胶手套，全身防护服
作业现场环境及应急设施： 作业点周围12米内应有应急冲淋房、应急洗眼器（固定式、移动式均可）
箱内货物卸载：人力做关只能堆一层高
铲车水平运输：水平运输不得超过5公里/小时
入库堆桩：氧化性剧毒品仓库双人双锁，此类物质与碱性气体隔离

应急措施

泄漏应急处理措施
对泄漏点进行隔离
50米内禁止作业
抢险人员必须佩戴正压式氧气呼吸面罩、全身防护服、防护靴进入泄漏点
检查气瓶阀门是否关紧
危险泄漏物应当集中储存处理

人员急救措施
皮肤接触：立即脱去污染的衣着，用大量流动清水冲洗至少15分钟
皮肤接触部位用苏打水涂抹
眼睛接触：立即提起眼睑，用大量流动清水或生理盐水彻底冲洗至少15分钟。就医
吸入：迅速脱离现场至空气新鲜处。保持呼吸道畅通。如呼吸困难，给输氧。如呼吸停止，立即进行人工呼吸。

消防应急措施
切断气源
若不能切断气源，则不允许熄灭泄漏处的火焰
如果情况允许将容器从火场移至空旷处
如果无法转移着火容器应对其周围进行隔离
灭火剂：雾状水、泡沫、干粉、二氧化碳、黄沙

作业人员签字

3.3.3,Digital information c

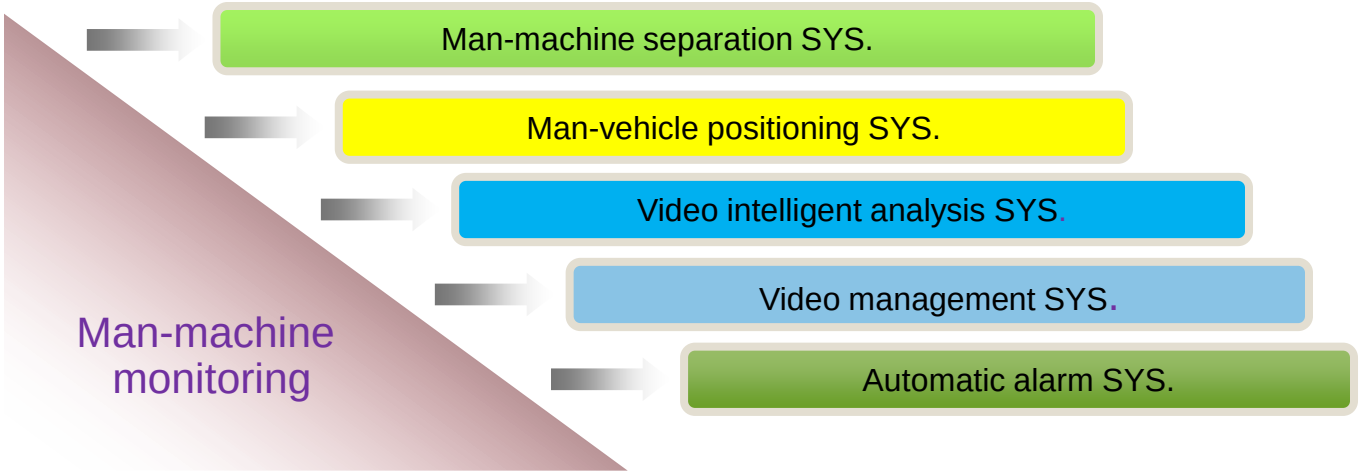
Labor
Emerg

Worksite checking forms

___年__月 __日

项目	情况		
	自查		抽查
劳防用品的使用及应急用品准备	时间：		
	地点：		
	时间：		
	地点：		
	时间：		
	地点：		
机械工具完好，规范使用及人员到岗	时间：		
	地点：		
	时间：		
	地点：		
	时间：		
	地点：		
现场作业环境达标及应急措施的落实	时间：		
	地点：		
	时间：		
	地点：		
	时间：		
	地点：		
现场作业标准执行	时间：		
	地点：		
	时间：		
	地点：		
	时间：		
	地点：		
当班作业人员：		作业长（库场管理员）	

3.4,Supervision and monitoring



3.4, Supervision and monitoring

3.4.1, Dynamic separation of man and machines in unpacking area

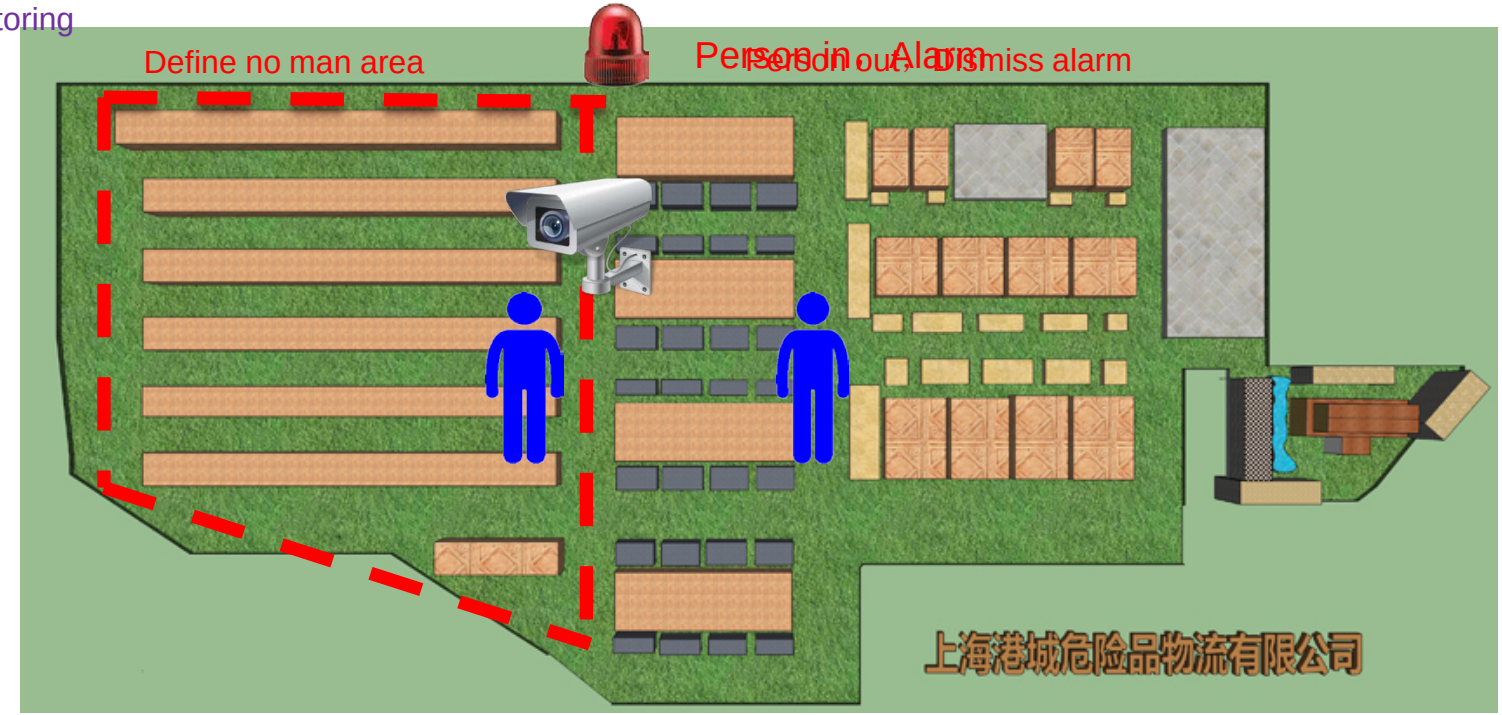
Alarm area (8m)

Alarm on (for driver)

Alarm off (for driver)

3.4,Supervision and monitoring

3.4.2,Static separation of man and machines in container area



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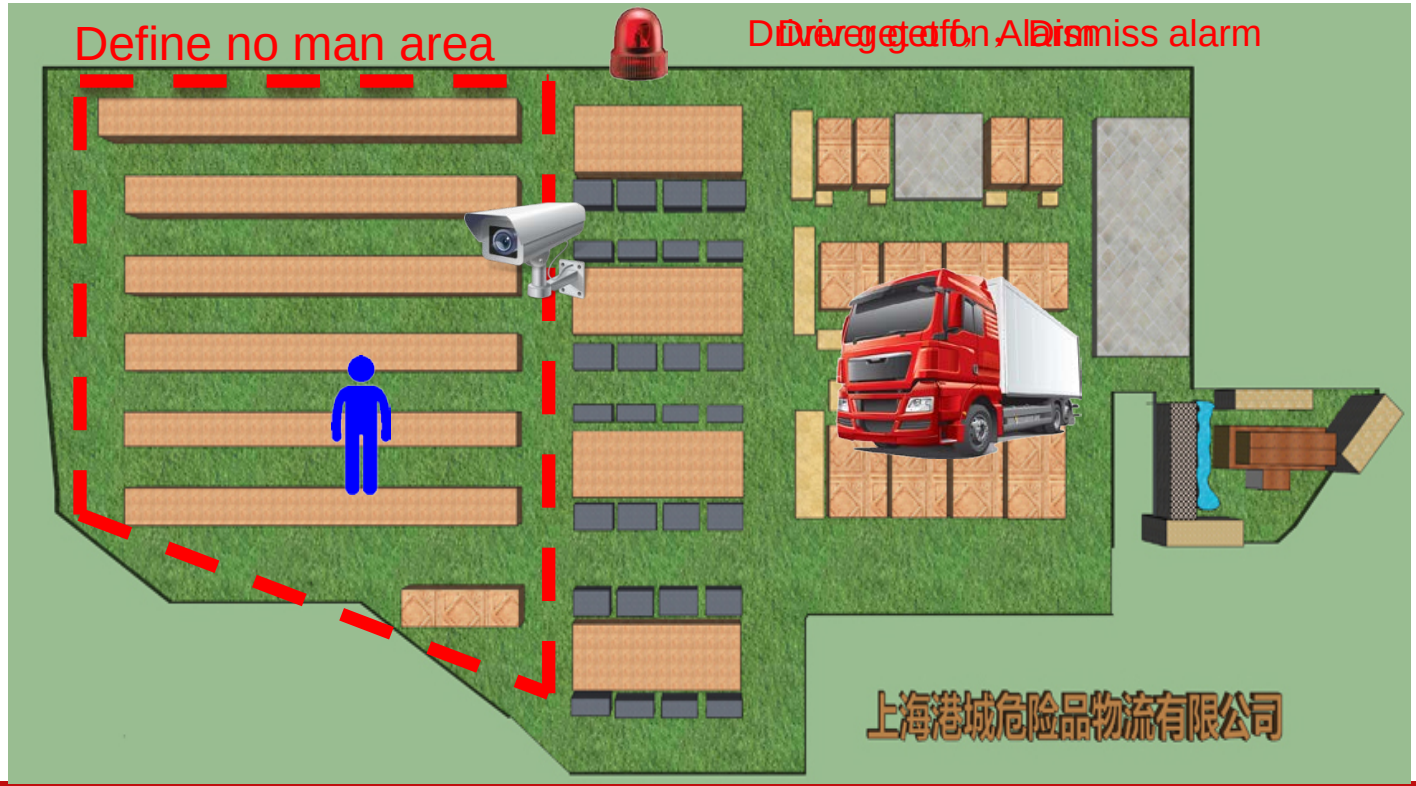
3.4.2,Static separation of man and machines in container area

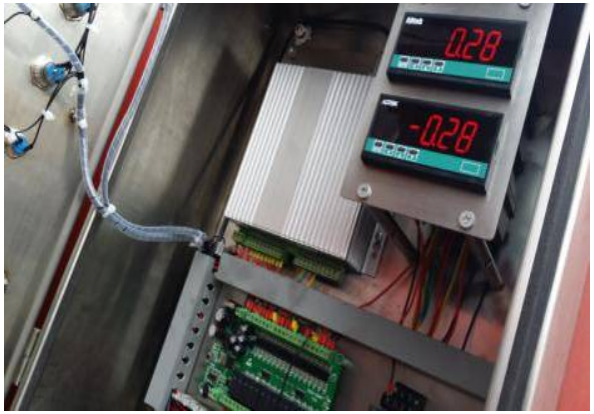


3.4, Supervision and monitoring

3.4.3, The vehicle monitoring

Fatigue driving alarm

Over speed driving alarm



Spontaneous combustion alarm

3.5, Virtual reality system for storage distribution monitoring and emergency measures

Collaborating with Shanghai Maritime University to use of the virtual reality combined with the production database technology to realize the presentations:

A: Container distribution

B: Potential hazards

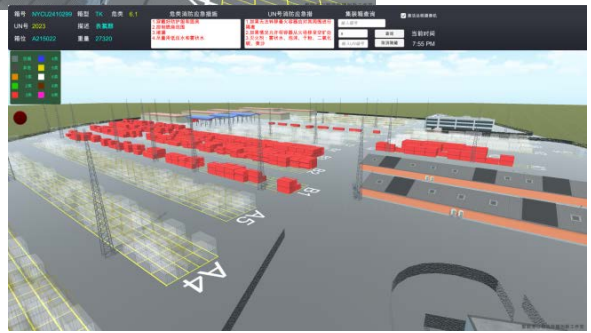
C: Emergency measure

D: Storage verification

E: Fire proof practice

3.5, Virtual reality system for storage distribution monitoring and emergency measures

- **Color division**
- **Emergency management**
- **Information Inquiry**
- **Fire proof practice**



Each container area is separated with 9 classes of containers

The yard is also separated with 9 classes of containers or empty containers.

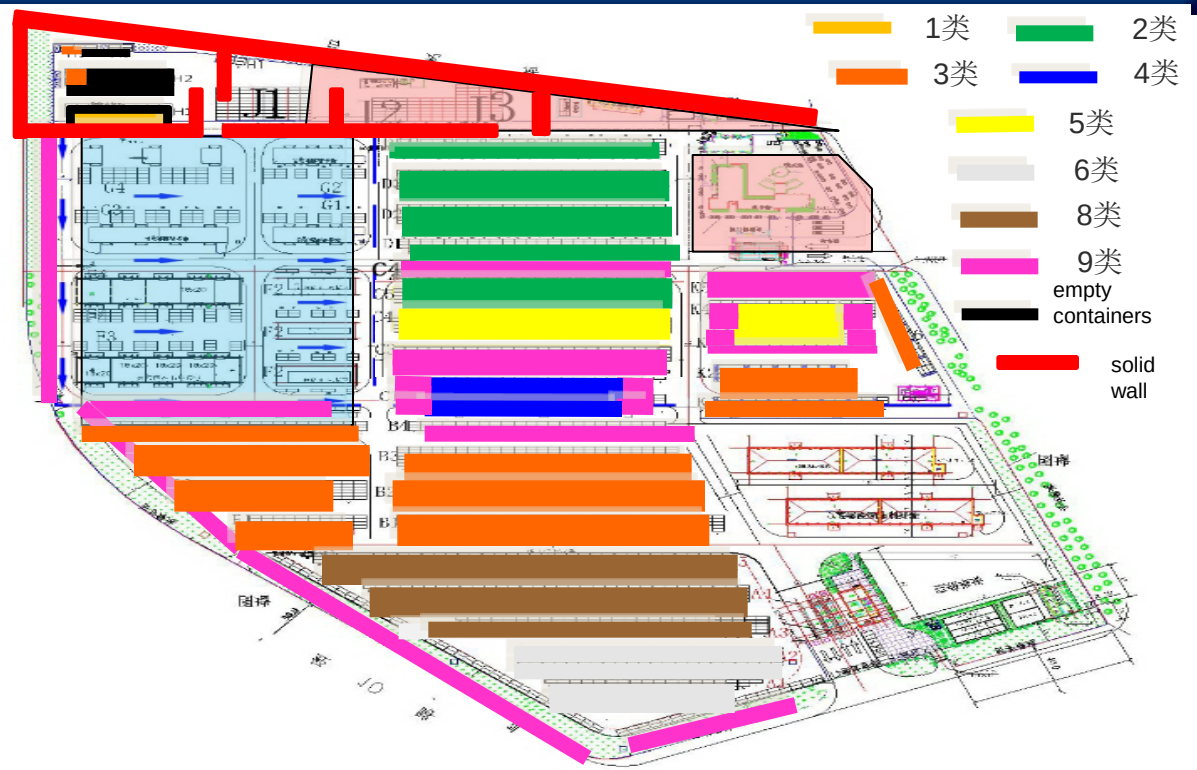
H1 is for storage of category 1 and separated with empty containers.

K3 is for storage of category 5.2,K4 for 5.1 and separated with 9 classes of containers.

C1 and C2 are for storage of category 4 and separated with 9 classes of containers.

Container classes in other area

Unpacking area is separated with solid wall in its northwest.



3.5, Virtual reality system for storage distribution monitoring and emergency measures

Simulated emergency drills


FMCSA
SHINYO SANKO

Summary :


Strict management measures
Advanced technology application
safety operation

THANKS !