Contents

SOUTHGATE TERMINAL

Port Operations Security Documentation

Technical / Ops Procedures – Manual Ops SOP

Purpose:
To provide procedures for maintaining critical terminal operations when automated systems (planning tools, sensors, scheduler) are unavailable or untrusted. This ensures operational continuity under degraded conditions.

When to Use

- AIS, GPS, or scheduling systems are offline or compromised
- Physical equipment must be operated manually due to override or comms failure
- Planning dashboards are inaccessible or unreliable

- Crane, berth, or container tasks require local coordination

Step 1: Confirm Degraded State

- Alert received or dashboard offline
- Confirm affected subsystems: AIS Aggregator, Container Scheduler, Crane Feed
- Log timestamp of service interruption and notify Coordinator

Step 2: Fallback Coordination Protocol

- Switch to physical or phone-based coordination with key terminal staff
- Assign a Manual Ops Lead for each shift (usually Dockside Supervisor)
- Use printed manifests or radio comms to:
- Confirm container ID and destination
- Track crane activity
- Coordinate berth sequence and clearances

Step 3: Manual Planning Flow

- Maintain whiteboard or paper-based record of:
- Ship arrivals and departures
- Crane assignments and lift cycles
- Container stack movements
- Record decisions with time, operator name, and authorisation source
- Confirm every manual task with second party when safety-critical (e.g. container override)

Step 4: Ops Log & Incident Tagging

- All manual tasks to be entered into /incident/manual-ops-log.txt
- Use structured format:

[Timestamp] [Operator] [Action Taken] [System Bypassed] [Confirmation Source]

- Flag any incidents involving:
- Missed clearances

- Wrong container movement
- Physical override of safety interlocks

Step 5: Restore & Reconciliation

- When system restored:
- Validate manual records against recovered system state
- Update container locations or berth schedules manually in planning tool
- Note discrepancies in Ops After-Action Log
- Identify if any incorrect assumptions occurred due to loss of visibility

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Manual Override Authorization Process

Purpose

This procedure establishes clear authorization workflow for manual overrides during system failures, ensuring safety while maintaining operational continuity. Use when automated systems are unreliable or compromised.

When to Use

- CCTV blackout affecting crane operations
- AIS signal loss requiring manual navigation
- Automated crane synchronization failures
- System anomalies creating unsafe conditions
- Crew refusing to work with automated systems

Authorization Levels

LEVEL 1: Immediate Safety Override (No approval required)

- Imminent danger to personnel
- Equipment malfunction creating immediate hazard
- Environmental emergency requiring immediate response

LEVEL 2: Operational Override (Supervisor approval)

- CCTV blackout affecting single crane
- Minor AIS discrepancies
- Single-system automation failure
- Crew comfort/confidence issues

LEVEL 3: Multi-System Override (Operations Manager approval)

- Multiple crane manual operation
- AIS system-wide manual operation
- Berth shutdown for safety
- Extended manual operations (>2 hours)

LEVEL 4: Terminal Override (Executive approval)

- Terminal-wide automation shutdown
- Multi-berth operations halt
- Extended operations suspension
- Media/regulatory visibility operations

EMERGENCY MANUAL OPERATIONS (Critical Time Pressure)

WHEN IMMEDIATE MANUAL OVERRIDE NEEDED:

30-SECOND SAFETY DECISION: - **IMMEDIATE DANGER?** - Override now, document later - **CREW SAFETY CONCERNS?** - Switch to manual immediately - **MULTIPLE SYSTEMS FAILING?** - Implement manual procedures

2-MINUTE EMERGENCY IMPLEMENTATION: 1. **Alert all operators:** "Switching to manual operations - enhanced safety protocols in effect" 2. **Deploy spotters:** Minimum one spotter per active crane/operation 3. **Reduce operational speed:** 50% normal speed until stabilized 4. **Establish radio contact:** Constant communication between operators and spotters

5-MINUTE EMERGENCY DOCUMENTATION: - Record time of manual override implementation - Document safety measures activated - Note which systems failed requiring manual override - Assign someone to handle formal authorization paperwork

WHEN TO USE: System failures creating immediate safety concerns, crew refusing to work with automated systems, multiple critical system failures

Authorization Workflow

Step 1: Situation Assessment (2 minutes)

1. **Safety Evaluation**

☐ Immediate danger present? - LEVEL 1 (proceed immediately)
☐ Equipment functioning but crew uncomfortable? - LEVEL 2
☐ Multiple systems affected? - LEVEL 3
☐ Terminal-wide impact? - LEVEL 4

2. **Impact Assessment**

☐ Document specific systems requiring manual override

☐ Estimate operational capacity under manual mode
☐ Calculate expected timeline for resolution

Step 2: Authorization Request **For Level 2-4:** Use standard authorization format:

TO: [Supervisor/Operations Manager/Executive] **SUBJECT:** Manual Override Authorization Request - [System] **PRIORITY:** [URGENT/HIGH/MEDIUM]

SITUATION: [Brief description of technical issue] **SAFETY IMPACT:** [Risk if continuing automated vs. manual] **OPERATIONAL IMPACT:** [Capacity reduction, timeline effects] **RECOMMENDED ACTION:** [Specific override request] **DURATION:** [Expected time in manual mode] **APPROVAL REQUESTED BY:** [Deadline for decision]

Step 3: Implementation Verification

1. **Pre-Override Checklist**

☐ Authorization received and documented
☐ Crew briefed on manual procedures
☐ Safety equipment verified operational
☐ Communication channels confirmed working

2. **Override Activation**

☐ Systems switched to manual mode
☐ Automated safety systems remain active where possible
☐ Manual operation commenced with continuous monitoring

3. **Status Communication**

☐ Technical Team: “Manual override implemented for [system]. Estimated duration: [time]”
☐ Incident Coordinator: “Operations status: Manual mode - [capacity]% capacity”
☐ Executive (Level 3-4): “Manual operations authorized - safety verified”

Special Circumstances

CCTV Blackout Response

- **Immediate:** Station manual spotters at affected zones
- **Short-term:** Implement buddy system for crane operations
- **Extended:** Consider operations suspension if safety compromised

AIS Signal Loss

- **Immediate:** Switch to radar/visual navigation
- **Short-term:** Coordinate with harbor master for traffic management
- **Extended:** Reduce vessel movement to essential only

Crew Safety Concerns

- **Listen:** Take crew concerns seriously - they know equipment best
- **Assess:** Evaluate technical safety vs. crew confidence
- **Decide:** Err on side of caution if crew expertise suggests risk

Quality Assurance During Manual Operations

Continuous Monitoring Requirements

- ☐ Double-check all manual operations
- ☐ Maintain communication every 15 minutes
- ☐ Document all decisions and actions
- ☐ Watch for crew fatigue or stress

Safety Verification Steps

- ☐ Verify each manual action before execution
- ☐ Maintain clear communication channels
- ☐ Have abort procedures ready
- ☐ Monitor crew stress and competence levels

Communication Templates

To Technical Team: "Manual override authorized for [system]. Please prioritize [system] restoration. Operations continuing at [X]% capacity."

To Executive Team: "Manual operations implemented safely. Impact: [description]. Restoration timeline: [estimate]. Continuous monitoring in place."

To All Teams: "OPERATIONS UPDATE: [System] in manual mode. Safety verified. Expected capacity: [X]%. Updates every 30 minutes."

Return to Automated Operations

Pre-Restoration Checklist

- ☐ Technical issue resolved and verified
- ☐ Systems tested in non-operational mode
- ☐ Crew briefed on return to automation
- ☐ Manual override authorization formally closed

Restoration Process

1. **Gradual Transition:** Return one system at a time where possible
2. **Verification:** Confirm each system functioning before full automation
3. **Monitoring:** Increased monitoring for first 30 minutes after restoration
4. **Documentation:** Record lessons learned and process improvements

Success Criteria

- Manual operations implemented safely without delay
- Clear authorization trail documented
- Operational capacity maintained at acceptable level
- Crew confidence and safety maintained
- Smooth transition back to automated operations

Related Procedures

- Use with: CCTV Blackout Response SOP
- Coordinate with: Safety Risk Assessment Template
- Reference: Technical Containment Guide (if technical cause suspected)
- Escalate to: Crisis Decision Authority Matrix (for complex authorization)

Competency Validation Procedures

Purpose

This procedure provides quick competency validation checklists before authorizing manual operations, ensuring personnel have adequate skills and experience to safely perform manual procedures during system failures.

When to Use

- Before authorizing manual override operations
- When switching from automated to manual operations
- During extended manual operation periods
- When crew expresses safety concerns about manual procedures
- After significant time gaps in manual operation experience

Pre-Operation Competency Assessment

Crane Operator Manual Competency Check Basic Qualifications Verification (2 minutes): - [ ] **Current Certification:** Valid crane operator certification on file - [ ] **Medical Clearance:** Current

medical clearance for manual operations - [ ] **Experience Level:** Minimum 6 months manual crane operation experience - [ ] **Recent Practice:** Manual operation within last 90 days

Skill Assessment Questions (3 minutes): 1. **Load Limits:** “What is the maximum load for this crane in manual mode?” 2. **Wind Restrictions:** “At what wind speed do we stop manual crane operations?” 3. **Emergency Procedures:** “How do you execute emergency stop during manual lift?” 4. **Communication:** “What radio protocol do you use with spotters?” 5. **Safety Zones:** “Where are the exclusion zones for this crane?”

Physical Readiness Check (2 minutes): - [ ] **Alertness:** Operator alert and focused (no signs of fatigue) - [ ] **Physical Condition:** No impairment from illness, medication, or stress - [ ] **Stress Level:** Comfortable with manual operation responsibility - [ ] **Communication Ability:** Clear radio communication demonstrated

Spotter Competency Assessment Essential Qualifications (2 minutes): - [ ] **Training Completion:** Completed spotter safety training - [ ] **Communication Skills:** Clear, loud voice and radio proficiency - [ ] **Visual Acuity:** Adequate vision for spotting operations - [ ] **Experience:** Previous spotting experience or recent training

Knowledge Verification (3 minutes): 1. **Hand Signals:** Demonstrate standard crane hand signals 2. **Emergency Signals:** Show emergency stop signal 3. **Position Awareness:** Identify safe spotting positions 4. **Communication Protocol:** Explain radio communication procedures 5. **Safety Responsibilities:** Describe spotter safety obligations

Technical Personnel System Override Competency System Knowledge Assessment (5 minutes): - [ ] **System Architecture:** Understanding of system interdependencies - [ ] **Manual Procedures:** Knowledge of manual override procedures - [ ] **Safety Interlocks:** Understanding of safety system interactions - [ ] **Restoration Process:** Knowledge of system restoration procedures

Technical Skills Verification: 1. **Override Procedures:** Walk through manual override steps 2. **Safety Verification:** Explain safety checks before override 3. **Monitoring Requirements:** Describe ongoing monitoring needs 4. **Escalation Triggers:** Identify when to escalate or abort

Competency Decision Matrix

APPROVED FOR MANUAL OPERATIONS Criteria (All must be met): - All basic qualifications current - Passes skill assessment (80% or better) - Demonstrates confidence and competence - No physical or mental impairment factors - Recent relevant experience documented

APPROVED WITH SUPERVISION Criteria: - Basic qualifications met - Minor gaps in skill assessment (60-79%) - Adequate physical and mental readiness - Requires experienced supervisor oversight - Additional safety measures implemented

TRAINING REQUIRED BEFORE AUTHORIZATION **Criteria:** - Basic qualifications met - Significant skill gaps identified (40-59%) - Physical and mental readiness adequate - Requires refresher training before operation - Alternative qualified personnel available

NOT AUTHORIZED FOR MANUAL OPERATIONS **Criteria:** - Qualifications expired or inadequate - Major skill deficiencies (below 40%) - Physical or mental impairment present - Lack of confidence or competence - Safety concerns identified

Rapid Competency Validation (Emergency Situations)

5-Minute Emergency Assessment When Time-Critical Situations Require Immediate Manual Operations:

Step 1: Critical Qualifications (1 minute) - [ ] Valid certifications (accept expired if within 30 days) - [ ] No obvious impairment or safety concerns - [ ] Operator expresses confidence in ability

Step 2: Essential Skills Check (2 minutes) - [ ] Demonstrate emergency stop procedure - [ ] Confirm understanding of load limits - [ ] Verify communication with spotters

Step 3: Safety Briefing (2 minutes) - [ ] Review specific hazards for this operation - [ ] Confirm emergency procedures - [ ] Establish enhanced monitoring

Emergency Authorization Criteria: - Safety-critical situation requiring immediate action - No fully qualified personnel immediately available - Operator meets minimum emergency criteria - Enhanced supervision and safety measures in place

Ongoing Competency Monitoring

During Manual Operations Continuous Assessment Indicators: - [ ] **Performance Quality:** Smooth, controlled operations - [ ] **Communication Effectiveness:** Clear, timely communication - [ ] **Safety Awareness:** Appropriate caution and awareness - [ ] **Stress Management:** Maintaining composure under pressure - [ ] **Decision Making:** Sound operational decisions

Performance Monitoring Checklist (Every 30 minutes): - [ ] Operations proceeding smoothly - [ ] Communication clear and effective - [ ] No signs of fatigue or stress - [ ] Safety procedures being followed - [ ] Quality of work maintaining standards

Competency Deterioration Warning Signs Immediate Intervention Required: - Unsafe operational practices - Poor communication or coordination - Signs of fatigue or impairment - Expressions of uncertainty or fear - Equipment handling errors

Intervention Actions: 1. **Immediate:** Stop current operation safely 2. **Assessment:** Evaluate cause of performance decline 3. **Decision:** Rest, supervision, or replacement 4. **Documentation:** Record competency concerns

Extended Manual Operation Considerations

Shift Changes and Handovers Competency Verification for New Personnel: - [ ] Brief incoming personnel on current situation - [ ] Verify competency of replacement personnel - [ ] Ensure continuity of safety standards - [ ] Document shift change competency decisions

Fatigue Management Monitoring for Operator Fatigue: - Maximum 4 hours continuous manual operation - Mandatory 15-minute breaks every 2 hours - Enhanced monitoring after 2 hours of operation - Immediate replacement if fatigue signs observed

Training and Development

Competency Gap Identification Common Skill Gaps: - Manual operation procedures not recently practiced - Communication protocols not familiar - Safety procedures not well understood - Equipment limitations not fully known

Rapid Training Procedures Quick Skills Refresher (15-30 minutes): - Review of manual operation procedures - Practice of communication protocols - Safety procedure walkthrough - Equipment familiarization update

Documentation Requirements

Competency Assessment Records Required Documentation: - Personnel competency assessment results - Authorization decisions and rationale - Training provided or required - Performance monitoring observations - Any competency-related incidents

Post-Operation Review Competency Performance Analysis: - Effectiveness of competency validation process - Personnel performance during manual operations - Training needs identified - Process improvements recommended

Success Criteria

- All manual operations performed by competent, authorized personnel
- No safety incidents due to operator incompetence
- Effective competency validation process that doesn't delay emergency response
- Continuous improvement of personnel skills and readiness
- Clear documentation of competency decisions and rationale

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