

GUIDELINES

FOR A HELICOPTER SUPPORTED PROJECT

(AN OUTLINE)

Ver. A



OUTLINE

PROJECT SCOPE AND MANAGEMENT

I PROJECT PLANNING AND LAYOUT

- A. MOBILIZATION AND DEMOBILIZATION
- B. CAMP LOGISTICS
- C. CARGO LOGISTICS

II HELICOPTER OPERATIONS

- A. AIRSPACE MANAGEMENT
- B. GENERAL HELICOPTER SAFETY
- C. HELIPAD REQUIREMENTS
- D. EMERGENCY PREPAREDNESS

III PROJECT SAFETY

- A. HELICOPTER OPERATIONS
- B. EXTERNAL LOAD OPERATIONS
- C. REFUELING OPERATIONS
- D. FLIGHT OPERATIONS
- E. SAFETY PROGRAM

IV COMMUNICATIONS

- A. AIR TO AIR
- B. AIR TO GROUND
- C. GROUND TO AIR
- D. GROUND TO GROUND
- E. LOCAL AND LONG DISTANCE

V CARGO HANDLING

- A. TYPE OF CARGO
- B. LOAD PREPARATION
- C. RIGGING
- D. SCHEDULING
- E. RECORDATION
- F. PRECISION PLACEMENT
- G. ONBOARD LOAD-MONITORING SYSTEMS
- H. COORDINATION AND DESTINATION
- I. AREA SURFACE TREATMENT

VI LOGISTICS SUPPORT

- A. HELICOPTER PARTS
- B. PROJECT SUPPORT



EXPANDED PROJECT OUTLINE

PROJECT SCOPE AND MANAGEMENT

I PROJECT PLANNING AND LAYOUT

A. MOBILIZATION AND DEMOBILIZATION

1. Helicopters and Support Equipment
2. Construction Equipment
3. Camp Equipment
4. Construction Labor
5. Expediter
6. Customs

B. CAMP LOGISTICS

1. Base Camp
 - a. Location
 - b. Size
 - c. Layout
 - Office Facilities and Equipment
 - Communications
 - Crew Housing
 - Food/Water/Laundry Services
 - Electrical Power and Grid Layout
 - Housing
 - Office
 - Communication
 - Services Provider
 - Work Area Lighting (indoors and out)
 - Medical Services
 - Facility and Staff
 - Helicopter Facilities
 - Helipads
 - size
 - utilities
 - Hangar Facility
 - hard surface access to helipads
 - utilities available
 - area fire suppression
 - forklift and crane
 - Parts Storage Facility
 - sheltered
 - unsheltered
 - climate controlled

- Work Shop
 - climate controlled
 - Hazardous Materials Storage and Handling Area
 - Fuel Farm
 - size
 - type
 - containment
 - drainage
 - firesuppression
 - Cargo Staging Area
 - Staging Area Selection and Layout
 - surface treatment
 - coarse aggregate
 - Incoming Cargo Storage Facility (sheltered, unsheltered)
 - Outgoing Cargo Site
 - load preparation
 - Rigging Site (pick-up)
 - Surface Treatment
 - coarse aggregate
 - Safety Zone
 - personnel
 - Dust Abatement
 - Wind Sock
 - Rigging Storage Facility
- 2. Work Site Camp (details determined by requirements)
 - a. Location
 - b. Size
 - c. Layout
- 3. Communications
 - a. Telephone, Facsimile, Satellite System, VHF FM (repeater system)
- 4. Drainage and Runoff Collection Areas As Required
 - a. Base Camp Area
 - Staging Site
 - Helipads, Hangar
 - Storage Facilities
 - Fuel Farm
 - Housing and Office Site
 - b. Work Site Areas

C. CARGO LOGISTICS

- 1. Materials Ordering and Acquisition
- 2. Orderly Scheduling and Transport to Cargo Staging Area
 - a. Orderly Scheduling and Transport to Work Site
 - Expediter
 - Load Master

II HELICOPTER OPERATIONS

A. AIRSPACE MANAGEMENT

- 1. Communication
 - a. Designated Radio Frequencies
 - b. Communication Priorities
 - c. Coordination Between External Load and Passenger Operations
- 2. Air Traffic Control
 - a. Aviation Regulations
 - b. Flight Plan Details
 - Density altitude
 - Wind speed and direction
 - Weather conditions
 - Weather forecast
 - Useful load calculation
 - Fuel onboard
 - Flight time
 - Trips per fuel cycle
 - Load weights
 - Load sequence
 - Lift-off time
 - Crew requirements
 - Special operational requirements
 - Safety considerations
 - c. Navigation Aids
 - NDB, PLASI, Landing lights, GPS
 - d. Local Airport Authority Hua Lien
 - e. Other Authority (Civil, Military, Police, Fire, Emergency)
- 3. Flight Path Plan
 - a. Route
 - Local traffic-Base Camp to and from Work Site
 - Non local traffic-to and from Base Camp
 - Emergency traffic
 - Passenger traffic
 - External load traffic
 - Low ceiling operations
 - Obstacle identification and awareness
 - Congested area avoidance

- Dwellings and road crossings
- Avoidance measures
- Flaggers
- Flight Path Distance
- Elevation difference between pick-up and drop-off site
- Altitude
- Emergency landing considerations
- Jettisonable external load considerations

B. GENERAL HELICOPTER SAFETY

- 1. Aircraft Crew
 - a. Qualifications
 - Pilots
 - Mechanics
 - b. Aircraft
 - Preflight inspection
 - Post flight inspection
 - Daily engine performance check
- 2. Responsibilities
 - a. Contractor
 - b. Employer
 - c. Supervisor
 - d. Worker

C. HELIPAD REQUIREMENTS

- 1. Size and Construction
 - a. Light
 - b. Medium
 - c. Heavy
- 2. Spacing
- 3. Utilities
- 4. Support Tools
- 5. Small Storage Container
 - a. Small Tools
 - b. Long Line Accessories
- 6. Area Surface Treatment
 - a. Dust Abatement
 - b. Debris Free Zone
 - c. Coarse Aggregate Perimeter

D. EMERGENCY PREPAREDNESS

- 1. Pre-Accident Plan
 - a. Emergency Rescue Information

- project management
- police
- fire
- rescue squad (on site, off site)
- hospital
- EMS Helicopter
- aviation authority
- communication procedures
 - radio
 - telephone, satellite telephone
- b. First Aid Trained Employees
 - inform work site crew
- c. Distribute to All Employees

III PROJECT SAFETY

A. HELICOPTER OPERATIONS

1. Helicopter Awareness (passengers, support personnel)
2. Approaching the helicopter
3. Effects of rotor wash
4. Helipad cleanliness
5. Clothing restrictions
6. Entering the helicopter
7. Exiting the helicopter
8. Securing personnel baggage
9. Securing internal freight
10. Seat belt operation
11. Location of fire extinguishers internally and at the helipads
13. Location of emergency exits
14. Location of first aid and survival kits
15. Passenger briefing cards in the applicable languages
16. External load hand signals
17. Center of gravity awareness
18. Emergency procedures
 - a. Priorities
 - b. Responsibilities
 - c. Communication
 - d. Scheduled safety meetings
 - e. Accident notification protocol
19. Passenger Manifest
 - a. Passenger Weight
 - b. Baggage Weight

B. EXTERNAL LOAD OPERATIONS

- 1. Daily inspection and operational check of the cargo hook
- 2. Daily inspection of the long line and associated rigging
- 3. External load hand signals
- 4. Dust abatement
- 5. Loose article control
- 6. Eye and ear protection
- 7. High visibility clothing
- 8. Communications
- 9. Lost communications procedure
- 10. Correct load rigging procedure
- 11. Tagline lengths required
- 12. Correct hooking of load to the helicopter
- 13. Normal operating procedure under the helicopter
 - a. Air crew responsibilities
 - b. Load master and rigging crew responsibilities
- 12. Emergency Release of External Load
 - a. Flight crew response
 - b. Load master and rigging crew response
- 13. Flight Crew
 - a. Duty period
 - b. Rotation schedule
 - c. Aircraft pre-flight inspection
 - d. Aircraft post-flight inspection

C. REFUELING OPERATIONS

- 1. Adequate fuel farm drainage and containment
- 2. Scheduled fuel pump filter changes
- 3. Grounding procedures
- 4. Refueling procedures
- 5. Daily aircraft fuel sump sample
- 6. Hot refueling procedures
- 7. Emergency procedures
 - a. Flight crew response
 - b. Ground crew response

D. FUEL FARM MANAGEMENT

- 1. Fire extinguisher location and operation
- 2. Fire extinguisher type and capability
- 3. Manned fire extinguisher
- 4. Daily inspection of fuel pumps
- 5. Daily inspection of grounding cables
- 6. Daily drainage of fuel pump sump

- 7. Fuel farm log and incident sheet
- 8. Emergency procedures
 - a. Flight crew response
 - b. Ground crew response
 - c. Emergency notification list

E. FLIGHT OPERATIONS

- 1. Daily and pre-flight inspections
- 2. Starting acknowledgments
- 3. Aircraft separation
- 4. Aircraft right of way
- 5. Inclement weather operations
- 6. Communications
 - a. Normal procedures
 - b. Emergency procedures
- 7. Lift off considerations
 - a. With external load
 - b. Without external load
- 8. Hovering
 - a. While being hooked to an external load
 - b. With ground crew under the helicopter
 - c. With external load
 - d. Without external load
- 9. Landing consideration
 - a. With external load
 - b. Without external load
 - c. Releasing external load
- 10. Emergency procedures
 - a. With external load
 - b. Without external load
- 11. Flight path to and from pick-up site
 - a. Approach and departure
 - b. Prevailing wind
 - c. Changing wind pattern
 - d. Safety zones (ground crew)
 - e. Emergency landing area (pick-up site)
- 12. Day to Day Coordination Meeting
 - a. Project activity
 - b. Aviation activity

F. SAFETY PROGRAM

- 1. Primary Objective-Prevent Accidents
 - a. Requirement
 - Total support and participation
 - Good judgement practices
 - Management controls
 - Training
 - Job knowledge
 - b. Safety Meetings
 - Organized meetings
 - Frequent scheduling
 - c. Safe Work Environment
 - Control physical and mechanical hazards
 - d. Provide for Adequate Program
 - Safeguards
 - First Aid Equipment
 - Safe Tools
 - Proper screening of employees
 - Proper employee assignments
 - Good employee morale
 - Enforcement of safety rules
 - Identifying responsibility for accident

IV COMMUNICATIONS

A. AIR TO AIR

- 1. VHF AM and VHF FM
- 2. UHF
- 3. 121.5Hz or Emergency Frequency

B. AIR TO GROUND

- 1. VHF AM and VHF FM (primary with repeater station)
- 2. UHF

C. GROUND TO AIR

- 1. VHF AM and VHF FM (primary with repeater station)
- 2. UHF
- 3. Standard Hand Signals

D. GROUND TO GROUND (work site)

- 1. VHF FM (primary with repeater station)
- 2. UHF



E. LOCAL AND LONG DISTANCE

1. Telephone, Satellite Phone, Facsimile, E-mail

V CARGO HANDLING

A. TYPE OF CARGO

1. Equipment
2. Supplies
 - a. Food Items
 - Perishable
 - Non-perishable
 - b. Fuel
 - Portable Bladders
 - Drums
 - c. Construction Materials
 - Hazardous, Toxic
 - Non hazardous, Non toxic

B. Explosives, Blasting Agents, Blasting Supplies

1. Main Magazine
 - a. Materials transfer
 - distribution magazine
 - explosives separate from detonators
 - b. Pick-up site
 - separate from main magazine
 - c. Handling
 - ground
 - systematic operation
 - man in charge
 - assignment of tasks
 - assure precise, orderly manner
 - trained personnel
 - fewer men equal fewer risks of accident
 - plainly marked container
 - air
 - systematic operation
 - transport
 - lift and set down carefully
 - quickly and efficiently
 - avoid delays on ground
 - explosives separate form detonators
 - protect from shock, friction, fire, moisture
2. Distribution Magazine
 - a. Drop-off Site
 - Safe zone

- Separate from other activity
- b. Handling
 - Air
 - systematic operation
 - lift and set down carefully
 - Ground
 - systematic operation
 - man in charge
 - assignment of tasks
 - assure precise, orderly manner
 - trained personnel
 - fewer men equal fewer risks of accidents
 - communication
 - radio
 - hand signals
- 3. Safety Measures
 - a. Safety meetings at regular intervals
 - b. Post safety regulations
 - Main magazine site
 - Distribution magazine sites
 - c. Enforce safety regulations
 - d. Post safe handling methods
 - e. Site inspections
 - Hazard identification and removal
 - Plainly marked handling sites
 - Two fire extinguishers per site

C. LOAD PREPARATION

- 1. Disassembly
- 2. Assembly
- 3. Rigging
- 4. Weighing

D. RIGGING

- 1. Two, Three and Four point lifting assemblies
- 2. Specific rigging assemblies
- 3. Multiple hook carrousels
- 4. Rated swivels
- 5. Cargo nets
- 6. Portable fuel bladders
- 7. Containers
- 8. Pallets
- 9. Long lines with remote hooks



10. Cement buckets
11. Pipe slings
12. Rated shackles
13. Safety equipment
 - a. Fire extinguishers
 - b. Heli-basket rescue module
 - c. Bambi water bucket
14. Special rigging tools

E. SCHEDULING

1. Day to Day Organizational Meetings
2. Departure
3. Estimated Time of Arrival
4. Cargo Priority

F. RECORDATION

1. Daily Summary Report
 - a. Weather description and temperature
 - b. Start up time
 - c. Crew members
 - d. Load master
 - e. Item description
 - f. Amount and weight
 - g. Total daily weight
 - h. Haul back load count
 - i. Damage
 - j. Departure time
 - k. Arrival time
 - l. Shutdown time
 - m. Total flight time per day

G. PRECISION PLACEMENT

1. Construction Activity
 - a. Power line grid
 - Setting towers
 - Pulling wire
 - b. Steel structures
 - c. Building structures
 - Air-conditioning
 - Ventilation
 - Heating
 - d. Concrete pours
 - e. Pipe line

- f. Equipment transport
 - Assembly
 - Disassembly
 - drill rig
 - heavy equipment
 - generator
 - communication antenna
 - warehousing, housing, office unit

2. Advantages

- a. Time and Cost Efficiencies
 - Increased production
 - Less ground handling requirements
 - less equipment damage
 - Increased safety

H. AIRCRAFT LOAD-MONITORING SYSTEMS

- 1. Load Cell Recording System
- 2. Paper Copy Recordation (Backup System)
- 3. Pre-weigh Loads

I. COORDINATION AND DESTINATION

- 1. Communication
 - a. Management to Expediter
 - b. Expediter to Load Master
 - Day to day meetings
 - Scheduling
 - Cargo list, Priority, Destination
 - load master to flight crew
 - load master to ground crew
 - load master to load foreman (work site)
 - load foreman to work site crew
 - c. Ground to Air
 - d. Ground to Ground
 - Separate frequency (with back-up frequency)

J. AREA SURFACE TREATMENT

- 1. Pick-up Site
 - Dust Abatement
 - Debris Abatement
- 2. Drop-off site
 - Dust Abatement
 - Debris Abatement

VI LOGISTIC SUPPORT

A. HELICOPTER PARTS

- 1. Order-Shipping-Receiving
- 2. Time Based Overhaul Components
 - a. On site spares package
 - b. Scheduled maintenance parts
 - c. Unscheduled maintenance parts
 - d. AOG parts
 - e. Non TBO parts
- 3. Courier Service
 - a. Air freight
 - Counter to counter
 - Federal Express
 - DHL
 - Purolator
 - Regular freight
- 4. Shipment Tracking
 - a. Initial confirmation
 - b. Tracking numbers
 - c. Departure date
 - d. Estimated time of arrival
 - e. Brokerage agent (Customs)
- 5. Additional Helicopter Support Items
 - a. local purchases
 - non specific tools
 - cleaners, solvents, spray paints...
 - additional rigging

B. PROJECT SUPPORT

- 1. Scheduling
 - a. Order-Shipping-Receiving
 - Helicopter fuel
 - Camp equipment fuel
 - Construction equipment fuel
 - Equipment parts
 - Food, water, camp services
 - b. Labor rotation
 - Transportation to and from Base Camp to work sites
 - Transportation to and from Hua Lien to Base Camp