

# GEAPS LEADERSHIP 2002 FORUM

27 June, 2002, Fort Worth, Texas USA

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## *What Knowledge? ...*

The **CORE COMPETENCIES** of grain handling operations

### **SUGGESTED CORE COMPETENCY...**

#### **SUGGESTED KNOWLEDGE AREAS...**

Suggested skill sets...

*The order in which the core competencies are presented is NOT ranked in any priority. However, the “level” of presentation within the outline DOES reflect ranking following this format.*

## **1. GRAIN QUALITY MANAGEMENT**

### **1.1. QUALITY DEFINITION**

- 1.1.1. Grain quality properties [physical, chemical]
- 1.1.2. End use quality requirements
- 1.1.3. Biotechnology trends & issues
- 1.1.4. Seed selection and agronomic practices

### **1.2. QUALITY DETERMINATION**

- 1.2.1. Food & feed quality standards
- 1.2.2. Grain analysis equipment
  - 1.2.2.1. Moisture meters, measurement and calibration
  - 1.2.2.2. Near infrared meters, measurement and calibration
- 1.2.3. Sampling equipment and procedures
- 1.2.4. Inspection, grade determination, factor analysis

### **1.3. QUALITY PRESERVATION**

- 1.3.1. Handling
- 1.3.2. Drying
- 1.3.3. Storage
- 1.3.4. Aeration
- 1.3.5. Pest management [monitoring & control]

### **1.4. QUALITY ASSURANCE**

- 1.4.1. Quality management system approach
- 1.4.2. Sanitation, cleanliness and food/feed safety
- 1.4.3. Segregation & identity preservation practices
- 1.4.4. Thresholds and limits
- 1.4.5. Traceability and documentation

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## *What Knowledge? ... Core Competencies...*

### **2. GRAIN HANDLING EQUIPMENT MANAGEMENT**

#### **2.1. EQUIPMENT TYPES**

- 2.1.1. Receiving equipment
- 2.1.2. Conveying & transfer equipment
- 2.1.3. Weighing equipment
- 2.1.4. Cleaning equipment
- 2.1.5. Drying equipment
- 2.1.6. Storage equipment
- 2.1.7. Aeration equipment
- 2.1.8. Load-out/shipping equipment
- 2.1.9. Bagging equipment

#### **2.2. EQUIPMENT SPECIFICATION AND SIZING**

#### **2.3. EQUIPMENT INSTALLATION**

#### **2.4. EQUIPMENT OPERATION AND PERFORMANCE**

#### **2.5. EQUIPMENT INSPECTION AND DIAGNOSTICS**

#### **2.6. EQUIPMENT MAINTENANCE AND REPAIR**

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## *What Knowledge? ... Core Competencies...*

### **3. HANDLING SYSTEMS & OPERATIONS TECHNOLOGY MANAGEMENT**

#### **3.1. PROCESS FLOW ANALYSIS**

#### **3.2. EQUIPMENT INTEGRATION**

#### **3.3. SYSTEM ANALYSIS AND PROCESS OPTIMIZATION**

#### **3.4. SYSTEM AUTOMATION AND PROCESS CONTROL**

3.4.1. Electronics

3.4.2. Sensors

3.4.3. Microprocessors and computers

3.4.4. Data analysis and interpretation

3.4.5. Statistical process control

3.4.6. Software and hardware integration

3.4.6.1. Automated equipment identification [AEI]

3.4.6.2. Grain dryer controllers

3.4.6.3. Grain temperature monitoring

3.4.6.4. Aeration controllers

3.4.6.5. Inventory monitoring

3.4.6.6. Bearing monitoring

#### **3.5. INFORMATION TECHNOLOGY**

3.5.1. Data Networks

3.5.2. Electronic data interchange [EDI]

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## *What Knowledge? ... Core Competencies...*

### **4. FACILITY OPERATIONS MANAGEMENT**

#### **4.1. PROJECT ANALYSIS, PLANNING & MANAGEMENT**

- 4.1.1. Scoping
- 4.1.2. Life-cycle cost analysis
- 4.1.3. Critical path analysis

#### **4.2. CONSTRUCTION MANAGEMENT**

- 4.2.1. New construction
- 4.2.2. Renovation, upgrade, expansion

#### **4.3. GRAIN RECEIVING, HANDLING AND SHIPPING MANAGEMENT**

- 4.3.1. Truck arrival and pit assignment
- 4.3.2. Storage space assignment
- 4.3.3. Blending practices
- 4.3.4. Operational efficiency
- 4.3.5. Housekeeping
- 4.3.6. Byproduct and waste handling management
  - 4.3.6.1. Grain dust, fines & foreign material

#### **4.4. TRANSPORTATION AND LOGISTICS**

- 4.4.1. Truck/fleet operations
- 4.4.2. Rail/rail yard operations
- 4.4.3. Barge/fleet operations
- 4.4.4. Ship & longshoring operations

#### **4.5. ENERGY & UTILITIES MANAGEMENT**

- 4.5.1. Procurement
- 4.5.2. Co-generation

#### **4.6. MATERIAL [NON-GRAIN] HANDLING EQUIPMENT/SYSTEMS**

- 4.6.1. Cranes
- 4.6.2. Fork lifts
- 4.6.3. Powered industrial trucks
- 4.6.4. Man lifts

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## *What Knowledge? ... Core Competencies...*

### **5. AGRI-BUSINESS ENVIRONMENT & MANAGEMENT PRACTICE**

#### **5.1. GRAIN PRODUCTION & PROCESSING [STRATEGIC ENVIRONMENT]**

- 5.1.1. Supply [production] trends & issues
- 5.1.2. Demand [end-user] trends & issues
- 5.1.3. Animal agriculture [livestock] trends & issues

#### **5.2. BUSINESS & AG ECONOMICS**

#### **5.3. FINANCIAL MANAGEMENT**

- 5.3.1. Budgeting
- 5.3.2. Accounting
- 5.3.3. Capitalization and financing
- 5.3.4. Payback & ROI

#### **5.4. PROCUREMENT/PURCHASING**

- 5.4.1. Vendor relations

#### **5.5. MARKETING & CUSTOMER RELATIONS**

- 5.5.1. Domestic and export markets

#### **5.6. MERCHANDISING/ORINATION**

- 5.6.1. Risk management practices
- 5.6.2. Trade rules & practice
- 5.6.3. Contracts

#### **5.7. COMMUNITY/PUBLIC RELATIONS/COMMUNICATIONS**

#### **5.8. ETHICS**

#### **5.9. BUSINESS & TRADE PRACTICE LAW**

- 5.9.1. Trade associations & trade rules
  - 5.9.1.1. Arbitration

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## *What Knowledge? ... Core Competencies...*

### **6. HUMAN RESOURCES MANAGEMENT**

- 6.1. EMPLOYEE RECRUITMENT, HIRING AND RETENTION**
- 6.2. SUPERVISION**
- 6.3. PERFORMANCE EVALUATION**
- 6.4. MOTIVATION AND INCENTIVES**
- 6.5. COMPENSATION ADMINISTRATION**
- 6.6. PROMOTION AND ADVANCEMENT**
- 6.7. DISCIPLINE & TERMINATION**
- 6.8. TRAINING & PROFESSIONAL DEVELOPMENT**
  - 6.8.1. Continuing education
  - 6.8.2. Professional certification
  - 6.8.3. Trade & professional association membership
  - 6.8.4. Written and oral communication
  - 6.8.5. Public speaking
- 6.9. PSYCHOLOGY & SOCIOLOGY, AND TEAM BUILDING**
- 6.10. COUNSELING**
- 6.11. LABOR LAW & REGULATORY COMPLIANCE**

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## *What Knowledge? ... Core Competencies...*

### **7. PROPERTY AND CASUALTY RISK MANAGEMENT**

#### **7.1. RISK/HAZARD ANALYSIS/EVALUATION**

- 7.1.1. Audits
- 7.1.2. Medical evaluations
- 7.1.3. Reporting and recordkeeping

#### **7.2. RISK/HAZARD ABATEMENT/CONTROL**

- 7.2.1. Engineering controls
  - 7.2.1.1. Fire suppression equipment/systems
- 7.2.2. Administration controls
  - 7.2.2.1. Policies & procedures
  - 7.2.2.2. Preventive maintenance
  - 7.2.2.3. Housekeeping
  - 7.2.2.4. Employee training
  - 7.2.2.5. Monitoring & inspection
- 7.2.3. Personal protective equipment

#### **7.3. SECURITY & SECURITY SYSTEMS**

- 7.3.1. Facility
- 7.3.2. Grain products [commodities]
- 7.3.3. Non-grain products [fertilizer, chemicals]

#### **7.4. EMERGENCY PREPAREDNESS/ACTION/RESPONSE**

- 7.4.1. Emergency services & mutual aid
- 7.4.2. Accidental release/spill containment
- 7.4.3. Recovery & salvage operations
- 7.4.4. Family relations
- 7.4.5. Media relations

#### **7.5. REGULATORY COMPLIANCE**

- 7.5.1. Safety & health
- 7.5.2. Environmental responsibility
- 7.5.3. Fire & life safety
- 7.5.4. Commercial transportation
- 7.5.5. Building [construction] codes & standards
- 7.5.6. Permits
- 7.5.7. Warehouse licensing & examinations

#### **7.6. INSURANCE & BONDING**