

Transportation, Distribution, and Logistics Competency Model

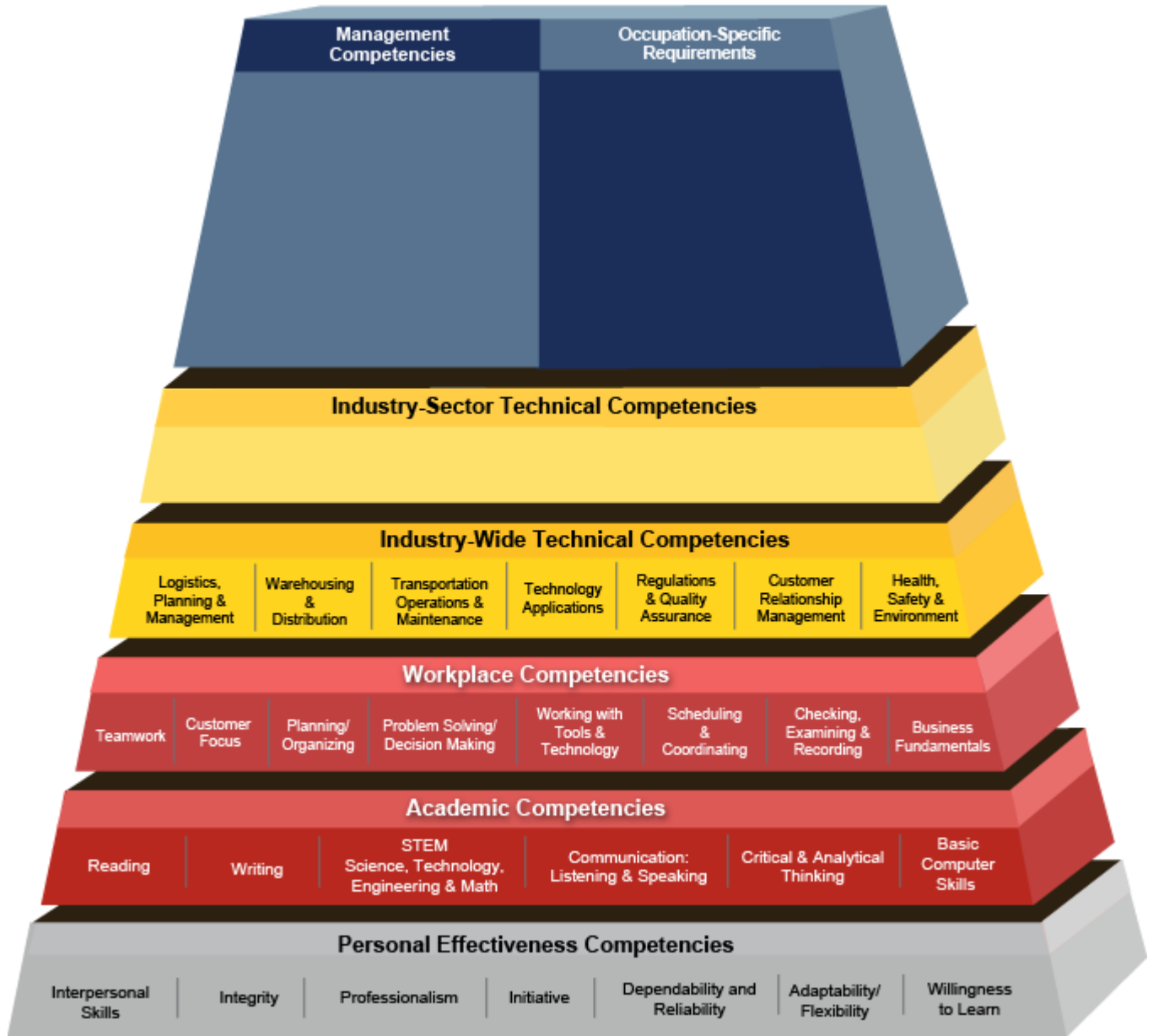


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ABOUT THE MODEL

The Transportation, Distribution, and Logistics Competency Model is depicted in a graphic consisting of nine tiers. The arrangement of the tiers in a pyramidal shape is not meant to be hierarchical, or to imply that competencies at the top are at a higher level of skill. The model's shape represents the increasing specialization and specificity in the application of skills as you move up the tiers. Tiers 1-4 have been developed and are divided into blocks. The blocks represent competency areas, that is, the applied skills, knowledge, abilities essential to successful performance in the transportation, distribution, and logistics industry. A table of the competency definitions and associated key behaviors follows the graphic.

Tiers 1 through 3 contain Foundation Competencies, which form the foundation needed to be ready to enter the workplace.

Tier 1 –Personal Effectiveness Competencies are shown as hovering below the pyramid because these competencies are essential for all life roles. Often referred to as "soft skills," personal effectiveness competencies are generally learned in the home or community and reinforced and honed at school and in the workplace. They represent personal attributes that may present some challenges to teach or assess.

Competency – A cluster of related knowledge, skills, and abilities that affects a major part of one's job (a role or responsibility), that correlates with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development.

Tier 2 – Academic Competencies are critical competencies primarily learned in a school setting. They include cognitive functions and thinking styles. Academic competencies are likely to apply to all industries and occupations.

Tier 3 – Workplace Competencies represent motives and traits, as well as interpersonal and self-management styles. They generally are applicable to a large number of occupations and industries.

Tiers 4 and 5 contain Industry Competencies, which are specific to an *industry or industry sector*. Cross-cutting industry-wide technical competencies make it possible to create career lattices within an industry wherein a worker can move easily across industry sub-sectors. Rather than narrowly following a single occupational career ladder, this model supports the development of an agile workforce.

Tier 4 – Industry-Wide Technical Competencies represent the knowledge and skills that are common across sectors within a broader industry. These technical competencies build on, but are more specific than, competencies represented on lower tiers.

Tier 5 – Industry-Sector Technical Competencies represent a sub-set of industry technical competencies that are specific to an industry sector.

Tiers 6 through 9 represent the specialization that occurs within specific *occupations* within an industry. Information on occupational competencies is available through O*NET OnLine (<http://online.onetcenter.org/>).

Tier 1—Personal Effectiveness Competencies

Personal Effectiveness Competencies						
Interpersonal Skills	Integrity	Professionalism	Initiative	Dependability & Reliability	Adaptability & Flexibility	Willingness to Learn

1. Interpersonal Skills: Displaying skills to work with others from a range of backgrounds.

Maintaining Open Communication

- Maintains open lines of communication with others
- Recognizes and accurately interprets the verbal and nonverbal behavior of others
- Establishes a high degree of trust and credibility with others

Working with Diverse People

- Is flexible and open-minded when dealing with a wide range of people
- Listens to and consider others' viewpoints
- Works well and develop effective relationships with diverse personalities
- Demonstrates respect for the opinions, perspectives, and individual differences of others
- Values diversity of people and ideas

2. Integrity: Displaying accepted social and work behaviors.

Behaving Ethically

- Abides by a strict code of ethics and behavior
- Chooses an ethical course of action and does the right thing, even in the face of opposition
- Differentiates between legal and ethical issues
- Performs work-related duties according to laws, regulations, contract provisions, and policies

Acting Fairly

- Treats others with honesty, fairness and respect
- Makes decisions that are objective and reflect the just treatment of others
- Is willing to have tough conversations when others need to be corrected

Taking Responsibility

- Takes responsibility for accomplishing work goals within accepted timeframes
- Accepts responsibility for one's actions and for those of one's group, team, or department
- Attempts to learn from mistakes
- Takes personal responsibility and accountability

3. Professionalism: Maintaining a professional demeanor.

Demonstrating Self-Control

- Demonstrates self-control by maintaining composure and keeping emotions in check even in difficult situations
- Deals calmly and effectively with stressful situations

Maintaining Professional Demeanor

- Projects a professional image of oneself and the organization
- Dresses appropriately for occupation and its requirements
- Maintains appropriate personal hygiene
- Remains free from substance abuse
- Demonstrates a positive attitude towards work
- Takes pride in one's work and the work of the organization

4. Initiative: Demonstrating a willingness to work.

Persisting

- Pursues work with energy, drive, and a strong accomplishment orientation
- Persists and expends extra effort to accomplish tasks even when conditions are difficult or deadlines are tight
- Persists at a task or problem despite interruptions, obstacles, or setbacks
- Exerts effort toward task mastery

Taking Initiative

- Takes initiative in seeking out new work challenges and increasing the variety and scope of one's job
- Establishes and maintains personally challenging but realistic work goals
- Goes beyond the routine demands of the job
- Seeks opportunities to influence events and originate action
- Strives to exceed standards and expectations

Working Independently

- Develops own ways of doing things
- Is able to perform effectively even with minimal direction, support or approval and without direct supervision
- Exhibits confidence in capabilities and an expectation to succeed in future activities

5. Dependability & Reliability: Displaying responsible behaviors at work.

Fulfilling Obligations

- Behaves consistently and predictably
- Is reliable, responsible, and dependable in fulfilling obligations
- Diligently follows through on commitments and consistently meets deadlines

- Demonstrates regular and punctual attendance; rarely is late for meetings or appointments.
- Follows written and verbal directions
- Complies with organizational rules, policies and procedures

Attending to Details

- Diligently checks work to ensure that all essential details have been considered
- Notices errors or inconsistencies that others have missed, and takes prompt, thorough action to correct errors

6. Adaptability & Flexibility: Being open to change and to considerable variety in the workplace.

Entertaining New Ideas

- Is open to considering new ways of doing things
- Actively seeks out and carefully considers the merits of new approaches to work
- Embraces new approaches when appropriate and discards approaches that are no longer working

Dealing with Ambiguity

- Takes effective action when necessary without having to have all the necessary facts in hand
- Easily changes gears in response to unpredictable or unexpected events, pressures, situations and job demands
- Effectively changes plans, goals, actions or priorities to deal with changing situations

7. Willingness to Learn: Understanding the importance of learning new information for both current and future problem solving and decision making.

Demonstrating an Interest in Learning

- Demonstrates an interest in personal learning and development
- Seeks feedback from multiple sources about how to improve and develop, and modifies behavior based on feedback or self-analysis of past mistakes
- Treats unexpected circumstances as opportunities to learn

Participating in Training

- Identifies when it is necessary to acquire new knowledge and skills
- Takes steps to develop and maintain knowledge, skills, and expertise necessary to achieve positive results
- Participates fully in relevant training programs and actively pursues other opportunities to develop knowledge and skills

Identifying Career Interests

- Takes charge of personal career development by identifying occupational interests, strengths, options and opportunities
- Makes insightful career planning decisions based on integration and consideration of

others' feedback, and seeks out additional training to pursue career goals

Integration and Application

- Integrates newly learned knowledge and skills with existing knowledge and skills
- Uses newly learned knowledge and skills to complete specific tasks
- Uses newly learned knowledge and skills in new or unfamiliar situations

Tier 2—Academic Competencies

Academic Competencies					
Reading	Writing	STEM Science, Technology, Engineering & Math	Communication -- Visual & Verbal	Critical & Analytical Thinking	Basic Computer Skills

1. Reading: Understanding written sentences, paragraphs, and figures in work-related documents.

Comprehension

- Locates, understands, and interprets written information in manuals, reports, memos, letters, forms, graphs, charts, tables, calendars, schedules, signs, notices, applications and directions
- Reads and understands maps; navigation charts; switching orders, train orders, or arrival and departure schedules; technical drawings; work orders, instructions, formulas, or processing charts; technical operating, service or repair manuals
- Recognizes and interprets the value of numbers and what they mean to the operation

Integration and Application

- Critically evaluates and analyzes information in written materials
- Integrates and synthesizes information from multiple written materials
- Applies what is learned from written material to follow instructions and complete specific tasks
- Applies what is learned from written material to future situations

2. Writing: Using standard English to compile information and prepare written documents.

Organization and Development

- Creates documents such as letters, directions, manuals, reports, graphs, and flow charts
- Communicates thoughts, ideas, information, messages and other written information, which may contain technical terms and concepts, in a logical, organized and coherent manner
- Ideas are well developed with supporting information and examples

Mechanics

- Writes in a manner appropriate for business with language appropriate for target audience
- Uses appropriate tone and word choice (e.g., writing is professional and courteous)

- Uses standard syntax and sentence structure
- Uses correct spelling, punctuation, and capitalization
- Uses appropriate grammar (e.g., correct tense, subject-verb agreement, no missing words)

3. STEM: Applies basic scientific, technological, engineering, and mathematical principles to complete tasks.

Science, Technology, and Engineering

- Understands basic scientific principles and to use commonly available technology
- Understands the scientific method (i.e., identifies problems, collects information, forms opinions and draws conclusions)
- Has knowledge of the practical application of engineering science and technology
- Applies the appropriate technical solution to complete tasks
- Solves problems where a variety of mechanical faults could be the reason for the problem

Mathematics

- Translates practical problems into useful mathematical expressions and uses appropriate mathematical formulas and techniques
- Adds, subtracts, multiplies and divides with whole numbers, fractions, decimals and percents
- Calculates averages, ratios, proportions and rates
- Takes measurement of weight, time, temperature, distance, length, width, height, etc
- Correctly converts from one measurement to another
- Solves simple algebraic equations
- Reads, tracks, and calculates gauge measurements
- Uses elementary statistics and laws of probability – mean, median, and standard deviation

4. Communication—Visual & Verbal: Listening, speaking, and signaling so others can understand. Communicate in spoken English well enough to be understood by others.

Speaking

- Expresses information to individuals or groups taking into account the audience and the nature of the information (e.g., technical or controversial)
- Speaks clearly and confidently in a logical manner
- Speaks using common English conventions including proper grammar, tone, and pace
- Effectively uses eye contact and non-verbal expression

Listening and Following Directions

- Receives, attends to, interprets, understands, and responds to verbal messages
- Picks out important information in verbal messages
- Understands and acts upon instructions to complete assignments

5. Critical & Analytical Thinking: Possessing sufficient inductive and deductive reasoning ability to perform job successfully.

Reasoning

- Critically reviews, analyzes, synthesizes, compares and interprets information
- Draws conclusions from relevant and/or missing information
- Apply critical thinking skills to formulate solutions to problems

Mental Agility

- Identifies connections between issues
- Quickly understands, orients to, and learns new assignments
- Shifts gears and changes direction when working on multiple projects or issues

Employing Unique Analyses

- Employs unique analyses and generates new, innovative ideas in complex areas
- Integrates seemingly unrelated information to develop creative solutions
- Develops innovative methods of obtaining or using resources when insufficient resources are available

6. Basic Computer Skills: Using a computer and related applications to input, store, and retrieve information.

Comprehending the Basics

- Understands and efficiently uses basic computer hardware (e.g. PCs, printers) and software (e.g. word processing software, spreadsheet software) to perform tasks
- Understands common computer terminology (e.g., program, operating system) and is familiar with the fundamental capabilities of computers
- Is comfortable and proficient with a computer

Keyboarding and Word Processing

- Enters data into computer files quickly, with an acceptable degree of accuracy
- Uses word-processing software to create, edit, and retrieve document files
- Uses basic reference materials and tools (e.g., spell check) to ensure accuracy
- Checks work and corrects style, format, or typographical errors and/or missing information
- Is proficient in Microsoft Word

Spreadsheets

- Uses spreadsheet software to enter, manipulate, edit and format text and numerical data
- Effectively creates and saves worksheets, charts, and graphs that are well organized, attractive, and useful
- Is proficient in Microsoft Excel

Internet Applications

- Uses the internet and web-based tools to manage basic workplace tasks (e.g., timekeeping,

maintaining employee records, conducting information searches)

- Is aware of company guidelines surrounding internet usage and complies with those guidelines

E-mailing

- Understands the company e-mail system and its basic functions (e.g., replying to/forwarding messages, using electronic address books, attaching files)
- Composes professional e-mails to communicate business-related information to coworkers, colleagues, and customers
- Ensures that key stakeholders are kept informed of communications by copying (i.e., “CCing”) them on important e-mails when appropriate

Tier 3—Workplace Competencies

Workplace Competencies							
Teamwork	Customer Focus	Planning & Organizing	Problem Solving & Decision Making	Working with Tools & Technology	Scheduling & Coordinating	Checking, Examining & Recording	Business Fundamentals

1. Teamwork: Working cooperatively with others to complete work assignments.

Working with Others

- Demonstrates the ability to work responsibly on a team
- Recognizes the importance of teamwork and its impact on business
- Assists others who have less experience or have heavy workloads
- Identifies and draws upon team members’ strengths and weaknesses to achieve results
- Learns from other team members
- Determines when to be a leader and when to be a follower depending on what is needed to achieve the team’s goals and objectives
- Uses a group approach to identify problems and develop solutions based on group consensus
- Effectively communicates with all members of the group or team to achieve team goals and objectives

Resolving Conflicts

- Delivers constructive criticism and voices objections to others’ ideas and opinions in a supportive, non-accusatory manner
- Handles conflicts maturely by exercising “give and take” to achieve positive results for all parties
- Exhibits tact and diplomacy and strives to build consensus
- Brings others together to reconcile differences to maintain a smooth workflow
- Reaches formal or informal agreements that promote mutual goals and interests, and obtains commitment to those agreements from individuals or groups

2. Customer Focus: Efficiently and effectively addressing the needs of clients/customers.

Providing Personalized Service

- Actively listens to customers to understand customer needs and goals
- Provides prompt, efficient and personalized assistance to meet the requirements, requests, and concerns of customers
- Provides thorough, accurate information to answer customers' questions and informs them of commitment times or performance guarantees
- Actively looks for ways to help customers by identifying and proposing appropriate solutions and/or services

Acting Professionally

- Is pleasant, courteous and professional when dealing with internal or external customers
- Develops constructive and cooperative working relationships with customers, and displays a good-natured, cooperative attitude
- Is calm and empathetic when dealing with difficult customers

Keeping Customers Informed

- Follows up with both internal and external customers during projects and following project completion
- Keeps clients up to date about decisions that affect them
- Seeks the comments, criticisms, and involvement of customers
- Adjusts services based on customer feedback

3. Planning & Organizing: Planning and prioritizing work to manage time effectively and accomplish assigned tasks.

Planning

- Approaches work in a methodical manner
- Plans and schedules tasks so that work is completed on time
- Keeps track of details to ensure work is performed accurately and completely

Prioritizing

- Prioritizes various competing tasks and performs them quickly and efficiently according to their urgency
- Finds new ways of organizing work area or planning work to accomplish work more efficiently

Allocating Resources

- Estimates resources needed for project completion
- Shows proper technique forecasting accurately both short term and long term
- Allocates time and resources effectively and coordinates efforts with all affected parties
- Keeps all parties informed of progress and all relevant changes to project timelines

Anticipating Obstacles

- Anticipates obstacles to project completion and develops contingency plans to address them
- Takes necessary corrective action when projects go off-track

4. Problem Solving & Decision Making: Applying critical-thinking skills to solve problems encountered on the work site.

Identifying the Problem

- Anticipates or recognizes the existence of a problem
- Identifies the true nature of the problem by analyzing its component parts
- Recalls previously learned information that is relevant to the problem

Locating, Gathering, and Organizing Relevant Information

- Effectively uses both internal resources (e.g., internal computer networks, company filing systems) and external resources (e.g., internet search engines) to locate and gather information relevant to the problem
- Examines information obtained for relevance and completeness
- Recognizes important gaps in existing information and takes steps to eliminate those gaps

Generating Alternatives

- Integrates previously learned and externally obtained information to generate a variety of high-quality alternative approaches to the problem
- Uses logic and analysis to identify the strengths and weaknesses, the costs and benefits, and the short- and long-term consequences of different approaches

Choosing a Solution

- Decisively chooses the best solution after contemplating available approaches to the problem
- Makes difficult decisions even in highly ambiguous or ill-defined situations
- Quickly chooses an effective solution without assistance when appropriate

Implementing the Solution

- Commits to a solution in a timely manner, and develops a realistic approach for implementing the chosen solution
- Observes and evaluates the outcomes of implementing the solution to assess the need for alternative approaches and to identify lessons learned

5. Working with Tools and Technology: Selecting, using, and maintaining tools and technology to facilitate work activity.

Selecting and Using Tools

- Identifies, selects, and applies appropriate tools or technological solutions to frequently encountered problems
- Carefully considers which tools or technological solutions are appropriate for a given job,

and consistently chooses the best tool or technological solution for the problem at hand

- Demonstrates appropriate use of basic hand tools to complete work functions
- Operates tools and technology including (cleaning equipment; emergency fire or rescue equipment; hoist, winch, or hydraulic boom; navigation technology or equipment; packaging or banding machine or equipment; track switches; global positioning system (GPS) technology; hand or power tools; two-way radio or mobile phone; vehicle repair tools or safety equipment; weighing or measuring devices in transportation)
- Uses appropriate personal protective equipment (PPE)
- Uses tool, equipment, and machinery safely and appropriately

Keeping Current

- Demonstrates an interest in learning about new and emerging tools and technologies
- Seeks out opportunities to improve knowledge of tools and technologies that may assist in streamlining work and improving productivity

Troubleshooting

- Learns how to maintain and troubleshoot tools and technologies
- Performs routine maintenance on tools, technology, and equipment
- Determines causes of operating errors and decides what to do about it
- Troubleshoots maintenance problems in accordance with established procedures
- Develop alternatives to complete a task if desired tool/technology is unavailable

6. Scheduling & Coordinating: Making arrangements (e.g. for transportation and distribution of goods) that fulfill all requirements as efficiently and economically as possible.

Arranging and Informing

- Handles all aspects of arrangements thoroughly and completely with little or no supervision
- Informs others of arrangements, giving them complete, accurate and timely information
- Responds to the schedules of others affected by arrangements
- Ensures that others receive needed materials in time
- Takes steps to verify all arrangements
- Recognizes problems, generates effective alternatives, and takes corrective action

Coordinating in Distributed Environments

- Coordinates schedules of colleagues, co-workers, and clients in regional locations (i.e., across time zones) to ensure that inconvenience is minimized and productivity is enhanced
- Leverages technology (e.g., internet, teleconference) to facilitate information sharing in distributed work environments
- Takes advantage of team member availability throughout business hours in multiple time zones to enhance productivity

Shift Work

- Effectively coordinates the transition of employees at the beginning and end of each work shift
- Disseminates crucial information in an organized manner to rapidly bring employees up to speed at the start of their shifts
- Ensures that employees are updated on work completed on past shifts and work that still needs to be completed
- Is willing to work various shifts and schedules

7. Checking, Examining, & Recording: Entering, transcribing, recording, storing, or maintaining information in written or electronic format.**Completing Forms**

- Selects and completes appropriate forms quickly and completely
- Attends to and follows through on important information in paperwork
- Forwards or processes forms in a timely and accurate manner
- Expedites forms, orders or advances that require immediate attention
- Obtains appropriate information, signatures, and approvals promptly

Maintaining Logs

- Keeps logs, records and files that are up-to-date and readily accessible (e.g., driver logs, flight records, repair records)
- Updates logs, files and records, noting important changes in status

Detecting Errors

- Verifies that all information is present and accurate before forwarding materials
- Detects and corrects errors, even under time pressure
- Compares shipment contents to records/verifies cargo against shipping papers
- Notices errors or inconsistencies

8. Business Fundamentals: Application of basic business and management principles to connect industry trends with services the company sells and provides to the customer.**Situational Awareness**

- Understands the mission, structure, and functions of the TDL organization
- Explains the impact of economic, social, and technological changes on a TDL organization
- Recognizes one's role in the functioning of the company and understands the potential impact one's own performance can have on the success of the organization
- Grasps the potential impact of the company's well-being on employees

Business Ethics

- Demonstrates respect for coworkers, colleagues, and customers
- Acts in the best interest of the company, the community, and the environment

- Complies with applicable laws and rules governing work and reports loss, waste, or theft or company property to appropriate personnel

Market Knowledge

- Understands market trends in the industry and the company’s position in the market
- Knows who the company’s primary competitors are, and stays current on organizational strategies to maintain competitiveness
- Knows the company’s critical customers, suppliers, and stakeholders
- Has foundational knowledge of distribution and logistics and understands its scope and impact on the economy
- Understands major competitive challenges faced by the TDL organization/industry

Tier 4—Industry-Wide Technical Competencies

Industry-Wide Technical Competencies						
Logistics, Planning & Management	Warehousing & Distribution	Transportation Operations & Maintenance	Technology Applications	Regulations & Quality Assurance	Customer Relationship Management	Health, Safety & Environment

1. Logistics Planning and Management: The planning, management, and control of the efficient and effective physical distribution of materials, products, and people to meet customer’s requirements.

Critical Work Functions

- Relates the multidimensional impact of transportation on the economy, public systems, national and local infrastructure, and the environment.
- Understands and evaluates the transportation systems’ political, regulatory, and legal issues.
- Describes and assesses the strengths and weaknesses of the major modes of international transportation.
- Applies systems analysis to the elements, relationships, and functions in the supply chain
- Develops plans including routes and schedules for transporting people and goods
- Adjusts transportation and distribution plans in response to changing conditions
- Implements security measures to minimize loss
- Ensures that cargo arrives at the right location, on time, and in the safest, most economical manner
- Maintains information on the movement of people/goods according to planned routes and schedules

Technical Content Areas

Planning

- Forecasting

- Contracting
- Risk factors
- Scheduling and monitoring
- Security
- Documentation

Routes and Schedules

- Local Delivery
- Long-Distance
- Special Handling
- Hazardous Materials

2. Warehousing & Distribution: Activities related to the operation of transportation and distribution facilities including ports, terminals, and warehouses.

Critical Work Functions

- Describes warehousing as part of the total supply-chain process
- Processes incoming products including unloading, receiving, checking, marking/identification and transporting to storage pick-up areas, work stations, or outbound staging areas and storing products for order-picking
- Process outbound shipments including order-picking, sorting and checking; packaging, sealing, weighing, and manifesting; and loading and load balancing and shipping
- Completes shipping papers and other appropriate labels and documentation
- Recognizes and identifies proper marking, labeling, and placarding
- Ships products on time and in the most cost-effective manner
- Tracks, sorts, labels, and load cargo accurately and safely
- Traces lost shipments and maintains loss and damage claim records

Technical Content Areas

Warehouse Operations

- Shipping and receiving
- Packaging
- Product stacking requirements
- Security and loss prevention systems
- Warehouse records and documentation
- Automated material handling systems
- Distribution and information systems
- Bar-coding, racking, labeling, and cross-docking

Supply Chain Logistics

- Supply chain elements

- Inventory management
- Customs and export control
- Logistics outsourcing

3. Transportation Operations & Maintenance: Activities related to the movement of people, materials, and products by road, air, rail, and water

Critical Work Functions

- Explains the role of transportation in the economy, the demand for transportation, and the role of government in regulating the industry
- Drives or operates transportation equipment
- Maintains and repairs transportation equipment
- Dispatches or coordinates schedules of transportation equipment
- Implements transportation plans and schedules
- Demonstrates understanding of activities related to dispatching, routing, and tracking transportation vehicles
- Recognizes universal signs and symbols such as colors, flags, stakes to function safely in the workplace
- Signals and observes directions or warnings to and from coworkers
- Examines vehicles to detect malfunctions, damage, or maintenance needed
- Updates maintenance records and logs according to company policies and procedures and government regulations

Technical Content Areas

Modes of Transportation

- Air Transportation – transportation of passengers and/or cargo using aircraft, such as airplanes and helicopters
- Rail Transportation – transportation of passengers and/or cargo using railroad rolling stock
- Water Transportation – transportation of passengers and cargo using watercraft, such as ships, barges, and boats
- Truck Transportation – over-the-road transportation of cargo using motor vehicles, such as trucks and tractor trailers
 - General freight transportation – handles a wide variety of general commodities, generally palletized, and transported in a container or van trailer
 - Specialized freight transportation – transportation of cargo that require specialized equipment due to inherent characteristics (size, weight, shape)
- Public transportation infrastructure (e.g., highways, airports, train terminals, ports, commercial space launching facilities, inter-modal facilities)
- Intermodal Transportation – transportation of passengers or freight using multiple modes of transportation

Operation

- Traffic flow: hubs, facilities, staging areas
- Transportation routes and schedules
- Dispatch
- Signaling
- Scheduling
- Tracking

Maintenance

- Equipment operation
- Equipment/machinery maintenance services
- Maintenance plans and schedules
- Maintenance logs

4. Technology Applications: Maintaining awareness of technological advances and applying appropriate technology to transportation, distribution, and logistics processes.**Critical Work Functions**

- Stays informed of technological advances that impact TDL activities
- Awareness of the benefits associated with implementing new technologies
- Application or use of various technologies that impact TDL activities

Technical Content Areas**Information Systems**

- Geographic Information Systems (GIS)
- Electronic Data Interchange (EDI)
- Global Logistics Systems (GLS)
- Intelligent Transportation Systems (ITS)
- Advanced Traveler Information Systems (ATIS)
- Transportation Management Systems (TMS)
- Warehouse Management Systems (WMS)
- Vehicle Monitoring Systems (VMS)

Technology

- Radio Frequency Identification (RFID)
- AutoID Technologies
- Materials handling technologies (e.g., voice-directed order picking technology)

5. Regulations & Quality Assurance: Compliance with relevant local, state, federal, and international laws and regulations that impact the transportation, distribution, and logistics industry. Application of industry standards to ensure quality service.

Critical Work Functions

- Understands the roles and functions of government agencies (e.g., Federal Aviation Administration) in regulating and supporting TDL organizations
- Complies with local, state, federal, and international laws
- Maintains logs and other required documents
- Monitors processes to ensure they are effective
- Inspects facilities or equipment for regulatory compliance
- Ensures materials and processes meet quality specifications
- Ensures equipment is operating to prescribed standards
- Raises and reports quality issues in a timely manner
- Suggests and/or implements continuous improvement actions such as business process reengineering and performance improvement strategies

Technical Content Areas

Standards

- International Organization for Standardization (ISO) standards
- Tariff and trade regulations
- Labeling regulations
- Environmental regulations
- OSHA regulations

Quality Assurance

- Total Quality Management (TQM)
- Enterprise Lean
- Six Sigma methodology

6. Customer Relationship Management: Marketing/selling transportation services and providing customer service to consumers of transportation services.

Critical Work Functions

- Follows plans to meet sales goals with existing products and services
- Sells logistics and transportation products and services
- Determines customer needs and requirements
- Processes customer orders and purchases
- Greets customers, guests, visitors, or passengers in a professional manner
- Provides ongoing customer service to both internal and external customers
- Responds to customer problems, complaints, and questions
- Tracks status of customer orders/purchases, transportation arrangements, and schedules

Technical Content Areas**Sales & Marketing Operations**

- Economic/market trends
- Competition
- Transportation, distribution, and logistics products and services
- Sales/marketing plans
- Sales/order documentation

Customer Service

- Internal and external customers
- Company policies and procedures
- Confidentiality
- Handling questions, problems, complaints
- Educating the customer
- Customer satisfaction and commitment to product or service

7. Health, Safety, and Environment: Assessing and managing risks associated with safety and environmental issues.**Critical Work Functions**

- Understands and follows relevant safety rules, regulations, and laws
- Follows organizational policies and procedures to maintain a safe work area
- Identifies and describes workplace hazards
- Wears personal protective equipment (PPE) as appropriate
- Follows emergency procedures
- Completes safety training on pertinent equipment and applies safe operating procedures
- Correctly identifies hazardous materials and substances
- Handles/transportes hazardous materials in accordance with government regulations and health standards
- Reports health, safety, and environmental problems
- Maintains documentation of compliance with health, safety, and environmental management systems
- Stays up to date on environmentally-friendly trends in the industry
- Practices sustainability by using processes that are non-polluting, conserving of energy and natural resources, economically efficient, and safe for workers, communities, and consumers
- Follows organizational procedures to reduce emissions, increase energy efficiency, and reduce the organization's carbon footprint

Technical Content Areas**Rules and Regulations**

- OSHA regulations

- HAZMAT regulations
- Personal Protective Equipment
- Health, safety, and environmental risks

Environmental Concerns

- Hazardous Materials
- Green issues impacting TDL industry
 - Greenhouse gas emissions
 - Energy efficiency
 - Carbon footprint
 - Fuel-saving technologies
 - Air/water quality

Safety Procedures

- Protective Gear
- Safety Practices
- Workplace Hazards
- Emergency Preparedness
- Investigations and Audits
- Documentation

Resources Reviewed

Developer	Resource	Link
Alaska Vocational Technical Center	Automotive Technology Program	http://www.avtec.alaska.edu/AutoTech.htm
Alaska Vocational Technical Center	Diesel/Heavy Equipment Technology Program	http://www.avtec.alaska.edu/HeavyEq.htm
American Association of Port Authorities	Professional Port Manager Certification Program	http://www.aapa-ports.org/Programs/content.cfm?ItemNumber=650&navItemNumber=518
American Public Transportation Association	APTA Manual of Standards and Recommended Practices for Bus Transit Systems	http://www.aptastandards.com/PublishedStandards/BusTransitStandards/tabid/126/Default.aspx
American Public Transportation Association	APTA Manual of Standards and Recommended Practices for Rail Passenger Equipment	http://www.aptastandards.com/PublishedStandards/PRESS/tabid/85/Default.aspx
American Public Transportation Association	APTA Manual of Standards and Recommended Practices for Rail Transit Systems	http://www.aptastandards.com/PublishedStandards/Rail/tabid/84/Default.aspx
American Public Transportation Association	APTA Manual of Standards and Recommended Practices for Streetcar / Heritage Trolley	http://www.aptastandards.com/PublishedStandards/Rail/StreetcarHeritageTrolley/tabid/180/Default.aspx
American Society of Transportation and Logistics, Inc. (AST&L)	Certification Programs	http://www.astl.org/i4a/pages/index.cfm?pageid=3313
Bay Region Center of Excellence	Logistics and Distribution "Warehousing Career Ladder"	www.ccewd.net
Bureau of Labor Statistics	Transportation Equipment Manufacturing	http://www.bls.gov/iag/tgs/iag336.htm
Bureau of Labor Statistics	Transportation and Warehousing	http://www.bls.gov/iag/tgs/iag48-49.htm
Bureau of Labor Statistics	Truck Transportation	http://www.bls.gov/iag/tgs/iag484.htm
Bureau of Labor Statistics	Transportation & Material Moving Occupations	http://www.bls.gov/oes/current/naics4_237100.htm
California Department of Education	Transportation Industry Sector	http://www.cde.ca.gov/re/pn/fd/documents/careertechstnd.pdf
Career Voyages	Industry Overview	http://www.careervoyages.gov/transportation-main.cfm
Council of Supply Chain Management Professionals	Supply Chain Management and Logistics Management Definitions	http://cscmp.org/Website/AboutCSCMP/Definitions/Definitions.aspx?XX=1
International Air Transport Association	Diploma in Advanced Air Traffic Control	http://www.iata.org/training/diploma_programme/advanced_airtraffic_control.htm
International Air Transport Association	Diploma in Air Cargo	http://www.iata.org/training/diploma_programme/air_cargo.htm
International Air Transport Association	Diploma in Air Law	http://www.iata.org/training/diploma_programme/air_law.htm

International Air Transport Association	Diploma in Airline Marketing and Sales	http://www.iata.org/training/diploma_programme/airline_marketing_sales.htm
International Air Transport Association	Diploma in Airline Operations	http://www.iata.org/training/diploma_programme/airline_operations.htm
International Air Transport Association	Diploma in Airport Management	http://www.iata.org/training/diploma_programme/airport_management.htm
International Air Transport Association	Diploma in Airport Operations	http://www.iata.org/training/diploma_programme/airport_operations.htm
International Air Transport Association	Diploma in Airport Planning	http://www.iata.org/training/diploma_programme/airport_planning.htm
Illinois Occupational Skill Standards and Credentialing Council	Skill Standards for Entry-Level Truck Driver	http://documents.ioes.org/1729156.pdf
Illinois State Board of Education	Transportation Technology Curriculum Guide	http://www.isbe.state.il.us/career/pdf/transportation_curriculum_guide.pdf
Institute for Transportation Research and Education at North Carolina State University	ITRE Training Course Offerings	http://www.itre.ncsu.edu/itremain/education/training_list.html
Institute for Transportation Research and Education at North Carolina State University	Transit Technical Certificate Program	http://www.itre.ncsu.edu/PTG/education/Certificate.html
Institute of Logistical Management	Certified Logistics Practitioner	http://www.logistics-edu.com/courses
International Warehouse Logistics Association	Certified Logistics Professional	http://www.iwla.com/what/CLP.asp
Modern Materials Handling 6/18/2008, Corinne Kator	Article: <i>Foodservice distributors turn to voice-directed picking</i>	http://www.mmh.com/article/CA6571485.html
National Academy of Railroad Sciences	Dispatcher	http://www.railroadtraining.com/programs_dispatcher.html
National Academy of Railroad Sciences	Railroad Conductor / Yard Crew	http://www.railroadtraining.com/programs_conductor.html
National Academy of Railroad Sciences	Railroad Engineering and Maintenance	http://www.railroadtraining.com/programs_engineering.html
National Academy of Railroad Sciences	Railroad Locomotive Engineer	http://www.railroadtraining.com/programs_locomotive.html
National Academy of Railroad Sciences	Railroad Mechanical Training	http://www.railroadtraining.com/programs_mechanical.html
National Academy of Railroad Sciences	Railroad Telecommunications	http://www.railroadtraining.com/programs_telecom.html
National Academy of Railroad Sciences	Signal Systems	http://www.railroadtraining.com/programs_signal.html
National Academy of Railroad Sciences	Trainmaster	http://www.railroadtraining.com/programs_trainmaster.html
National Academy of Railroad Sciences	Yardmaster	http://www.railroadtraining.com/programs_yardmaster.html

National Association of Fleet Administrators	Certified Automotive Fleet Manager	http://www.nafa.org/Content/NavigationMenu/Professional and Development1/Education and Events2/Certification/SYLLABUS_CAFM_Program_v2007.doc
National Association of Safety Professionals	Certified DOT HAZMAT Technician	http://www.naspweb.com/dot_hazmat.html
National Automotive Technicians Education Foundation	Automobile Program Standards	http://www.natef.org/documents/Auto_standards_2005.pdf
National Automotive Technicians Education Foundation	Light/Medium Duty CNG/LPG Training Programs	http://www.natef.org/program_standards/pdf/altstds.pdf
National Automotive Technicians Education Foundation	Medium/Heavy Truck Technician Training Programs	http://www.natef.org/program_standards/pdf/truck_standards.pdf
National Private Truck Council	Certified Transportation Professional	https://www.nptc.org/index.php?option=com_docman&task=catview&gid=115&Itemid=230
National Transit Institute	Advanced Transit Technologies	http://www.ntionline.com/topic.asp?TopicArea=3
National Transit Institute	Audio Teleconferences	http://www.ntionline.com/topic.asp?TopicArea=7
National Transit Institute	Management Development	http://www.ntionline.com/topic.asp?TopicArea=2
National Transit Institute	Multimodal Transportation Planning	http://www.ntionline.com/topic.asp?TopicArea=4
National Transit Institute	Transit Program Management and Compliance	http://www.ntionline.com/topic.asp?TopicArea=1
National Transit Institute	Workplace Safety and Security	http://www.ntionline.com/topic.asp?TopicArea=5
North American Transportation Management Institute	Certified Director of Maintenance/Equipment	http://www.natmi.org/displaycommon.cfm?an=2#CDME
North American Transportation Management Institute	Certified Director of Safety	http://www.natmi.org/displaycommon.cfm?an=2#CDS
North American Transportation Management Institute	Certified Driver Trainer	http://www.natmi.org/displaycommon.cfm?an=2#CDT
North American Transportation Management Institute	Certified Safety Supervisor	http://www.natmi.org/displaycommon.cfm?an=2#CSS
North American Transportation Management Institute	Certified Supervisor of Maintenance/Equipment	http://www.natmi.org/displaycommon.cfm?an=2#CSME
Occupational Information Network	Mates-Ship, Boat, and Barge	http://online.onetcenter.org/link/summary/53-5021.02
Occupational Information Network	Pilots, Ship	http://online.onetcenter.org/link/summary/53-5021.03
Occupational Information Network	Ship and Boat Captains	http://online.onetcenter.org/link/summary/53-5021.01
Occupational Information Network	Cargo and Freight Agents	http://online.onetcenter.org/link/summary/43-5011.00
Occupational Information Network	Sailors and Marine Oilers	http://online.onetcenter.org/link/summary/53-5011.00
Occupational Information Network	Aviation Inspectors	http://online.onetcenter.org/link/summary/53-6051.01

Occupational Information Network	Freight and Cargo Inspectors	http://online.onetcenter.org/link/summary/53-6051.08
Occupational Information Network	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	http://online.onetcenter.org/link/summary/53-6051.07
Occupational Information Network	Taxi Drivers and Chauffeurs	http://online.onetcenter.org/link/summary/53-3041.00
Occupational Information Network	Bus Drivers, Transit and Intercity	http://online.onetcenter.org/link/summary/53-3021.00
Occupational Information Network	Airline Pilots, Copilots, and Flight Engineers	http://online.onetcenter.org/link/summary/53-2011.00
Occupational Information Network	Commercial Pilots	http://online.onetcenter.org/link/summary/53-2012.00
Occupational Information Network	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	http://online.onetcenter.org/link/summary/53-1021.00
Occupational Information Network	Bus and Truck Mechanics and Diesel Engine Specialists	http://online.onetcenter.org/link/summary/49-3031.00
Occupational Information Network	Flight Attendants	http://online.onetcenter.org/link/summary/39-6031.00
Occupational Information Network	Aircraft Mechanics and Service Technicians	http://online.onetcenter.org/link/summary/49-3011.00
Occupational Information Network	Truck Drivers, Heavy and Tractor-Trailer	http://online.onetcenter.org/link/summary/53-3032.00
Occupational Information Network	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	http://online.onetcenter.org/link/summary/53-1031.00
Occupational Information Network	Bus Drivers, School	http://online.onetcenter.org/link/summary/53-3022.00
Occupational Information Network	Railroad Conductors and Yardmasters	http://online.onetcenter.org/link/summary/53-4031.00
Occupational Information Network	Laborers and Freight, Stock, and Material Movers, Hand	http://online.onetcenter.org/link/summary/53-7062.00
Occupational Information Network	Logisticians	http://online.onetcenter.org/link/summary/13-1081.00
Occupational Information Network	Transportation Managers	http://online.onetcenter.org/link/summary/11-3071.01
Office of Apprenticeship	Apprenticeship Work Process - Truck Driver, Heavy	http://www.careeronestop.org/competencymodel/modelFiles/Worker%20TRUCK%20DRIVER.HEAVY.pdf
Office of Apprenticeship	Construction Driver	http://www.doleta.gov/OA/bul99/BUL99-12%20Construction%20Driver.pdf
Office of Apprenticeship	Truck Driver, Heavy (Roehl)	http://www.doleta.gov/oa/bul07/Bulletin%202007-02-att2.pdf
Ohio Department of Education	Transportation Systems Career Field Technical Content Standards	http://www.ode.state.oh.us/GD/Templates/Pages/ODE/ODEDetail.aspx?Page=3&TopicRelationID=1396&Content=44599

Oregon Department of Education	Cluster Knowledge and Skills - Transportation -	http://www.ode.state.or.us/search/page/?id=953
Oregon Department of Education	Focus Area Skill Sets - Distribution and Logistics; Health, Safety and Environmental Management, Logistics Planning and Management Services; Facility and Mobile Equipment Maintenance; Sales and Service; Warehousing and Distribution Operations; Transportation Operations; Transportation Systems	http://www.ode.state.or.us/search/page/?id=953
Professional Truck Driver Institute	Skill Standards for Entry-Level Tractor Trailer Drivers	http://www.ptdi.org/errata/SKILL_STANDARDS_ENTRYLEVEL.pdf
Professional Truck Driver Institute	Skill Standards for Professional Solo Tractor Trailer Drivers	http://www.ptdi.org/errata/DFSkillStandards.pdf
Rexroth Bosch Group	Materials Handling Technology	http://www.boschrexroth.com/business_units/bri/subwebsites/systems_engineering/en/Industry_Segments/Materials_Handling_Technology/applications_material/index.jsp
SAE International	Fundamentals of Drivetrain Systems Certificate Program	http://www.sae.org/events/training/seminars/certificate/cert_fundamentals.htm
SAE International	Oakland University Automotive Product Development Management Certificate Program	http://www.sae.org/events/training/seminars/oaklandu/
Texas Skill Standards Board	Logistics and Inventory Control	http://www.tssb.org/wwwpages/pdffiles/MSSClogisticsandinventorycontrolss.pdf
The Association for Operations Management	Certified in Production and Inventory Management	http://www.apics.org/Certification/CPIM/
The Travel Institute	Certified Travel Industry Executive (CTIE) Certification	http://www.thetravelinstitute.com/home.cfm?tn=standard&menuid=5&navids=1,5&pageid=10
The Travel Institute	Certified Travel Associate (CTA) Program	http://www.thetravelinstitute.com/home.cfm?tn=standard&menuid=98&navids=1,4,98&pageid=83
The Travel Institute	Certified Travel Counselor (CTC) Program	http://www.thetravelinstitute.com/home.cfm?tn=standard&menuid=100&navids=1,4,100&pageid=84
Transport Canada	Assessment of GIS Technologies for ITS Applications	http://www.its-sti.gc.ca/en/downloads/execsum/tp13224e.htm
U.S. Department of Education Office of Vocational and Adult Education	Transportation, Distribution, & Logistics (Career Cluster)	http://www.careerclusters.org/resources/ClusterDocuments/tlddocuments/TDLFinal.pdf
U.S. Department of Education Office of Vocational and Adult Education	Transportation, Distribution, & Logistics (Career Lattice)	http://careerclusters.org/resources/ClusterDocuments/tlddocuments/1TDLModel.pdf

U.S. Department of Labor	Framework of Competencies by the Advanced Manufacturing Industry	http://www.careeronestop.org/competencymodel/Info_Documents/Advanced-Manufacturing.pdf
U.S. Department of Transportation - Federal Highway Administration	Environmental Competency Building (ECB) Program	http://environment.fhwa.dot.gov/ecb/index.aspx
Washington State Skill Standards	Transportation Technology Skill Standards	http://www.wa-skills.com/transportation.html