

Memphis Overnight Cargo Learning Case

An original logistics and quality management case with an editable dataset, worked decisions and practical portfolio tools.

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Original fictional illustration. No carrier affiliation or endorsement.

12 PACKAGES / 4 DECISIONS / 1 OVERNIGHT PROMISE

A practical casebook for learning the task, the handoff and the whole system.

YOUR LEARNING ROUTE

Start here

Your task is to protect an overnight service promise when four constraints collide: weather, incomplete import data, a routing error and reduced transport capacity. You will follow one package, reconcile a twelve-package batch, choose what can move, explain what must wait and leave evidence another person can audit.

Memphis provides the real-world setting. River City Overnight is a completely fictional teaching company. All package records, customers, timestamps, priorities, capacities, prices, failures and outcomes in the exercises are invented. They do not describe FedEx operations or incidents. This case does not reproduce a video transcript or teach airport security procedures.

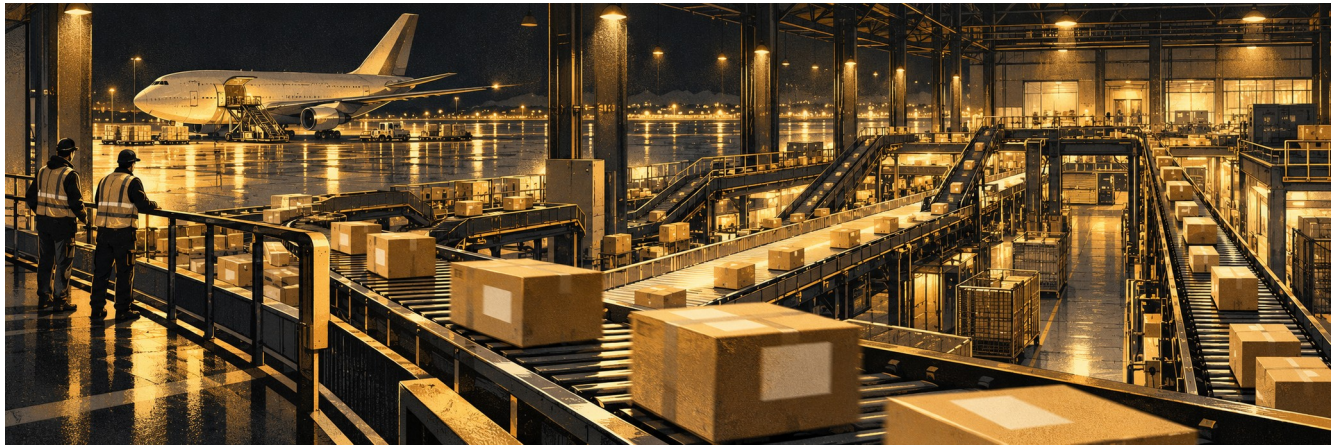
This is one substantive case, not a completed 40-hour course. Suggested practice time is 4–6 hours, depending on how much you write. That is a planning estimate, not accredited credit. No certificate, job qualification, employer endorsement or regulatory authorization is conferred.

By the end, produce five reviewable items:

1. A two-lane map showing physical movement and the data or authorization that permits the next step.
2. A one-page decision record for the disrupted night.
3. A KPI register with checked denominators and a short interpretation.
4. A risk log and contingency checklist with owners and stop conditions.
5. A portfolio summary that separates your analysis from actual work experience.

Work through Sections 1–8 before opening the answer key. The separate CSVs are editable; use your own spreadsheet program or calculate on paper. No external software installation is needed.

Your first day on the floor



Illustrated fictional setting. Follow the case text and actual employer procedures.

Begin as a new general-labor team member working with training packages and an assigned trainer. You are not expected to know aviation, customs or quality-management terminology. Your first responsibility is to learn the approved task, recognize when something differs from it and know whom to tell. This case is desk-based practice; it is not permission to operate equipment or handle regulated cargo.

Imagine your trainer gives you a package marked RCO-1001. A later team will rely on both the package and the information you leave behind. If you record the wrong identity, someone can make the wrong decision even when the package itself is undamaged. If you notice a mismatch and say nothing, the next person may inherit a problem they cannot see.

Task and purpose

What you learn with your trainer	Why it matters	Who relies on it next
Match the training package to the correct record	Keeps the physical item and its information together	The receiving or sorting team
Follow the approved task sequence	Makes the result repeatable and keeps required checks visible	The next operator and team leader
Record the real event and time accurately	Helps others distinguish completed work from an estimate	The planner, customer-service team and investigator
Notice damage, a mismatch, a missing record or an unfamiliar instruction	Gives the team a chance to contain the problem early	The authorized specialist or supervisor
Hand over the package and its status clearly	Prevents a hold or open question from disappearing between teams	The person accepting the handoff

Your starting habit is: spot it, record what you actually know, speak up through the approved route and confirm the handoff. Do not fill a blank with a guess, erase an uncomfortable fact or decide that “probably fine” is the same as authorization.

A practice handoff could be: "This is RCO-1001. The package ID and the record disagree. I have not marked the check complete. I told the trainer at 21:45, and the trainer owns the next decision." That is useful information, even if you cannot solve the cause yourself.

Learn the bigger picture one question at a time

Ask your trainer: What does good work look like here? What should make me pause? Who receives my work? What happens if this step is wrong or late? What evidence should I leave? Who is allowed to make a decision I cannot make?

In this case, a careful record can help a planner protect a connection, a quality lead find a repeat error and a customer-service colleague give an honest update. Your role matters because the next team cannot reliably recover information that was never recorded. The wider system becomes easier to understand as you connect each task to the person who needs it.

A sensible learning sequence is to observe an approved demonstration, explain the task back in your own words, practice under supervision, receive feedback and show that you can do it consistently. Actual employers decide the competence and authorization required for a task. Working through this case does not replace that assessment.

You may become interested in receiving, inventory, dispatch support, logistics planning, quality support or team coordination as you learn. Those are possible areas to explore, not promised promotions or qualifications. Start by doing one task accurately and understanding its purpose; then learn the handoff before and after it.

1 Why Memphis is a useful learning setting

Public facts and their limits

FedEx records the start of its operations on 17 April 1973 with 14 aircraft and 186 packages serving 25 cities. Its historical account identifies Memphis's location, relatively few weather-related airport closures, airport improvements and hangar availability as reasons for choosing the city. That history helps explain the network's development; it does not mean Memphis is immune to weather disruption or that every modern shipment passes through it. [S13]

FedEx's October 2024 announcement describes the Memphis World Hub as a 940-acre facility with 171 aircraft gates and capacity to process 484,000 packages per hour. These are dated company-reported facility and capacity figures, not measured throughput for tonight. The same announcement describes a new automated sorting facility and the aim of reducing package touches. [S1]

A useful historical caution comes from a 2015 FedEx article: it refers to approximately 250 flights arriving and departing Memphis each weekday. That does not mean 250 different aircraft arrive each night. A flight movement, a distinct aircraft and a daily package count are different units. [S2]

The Wendover video identified during research as "How Overnight Shipping Works" is optional visual context. Treat it as an explanation to question and compare with primary sources, not a current operating manual. Never copy its transcript into your portfolio. [S3]

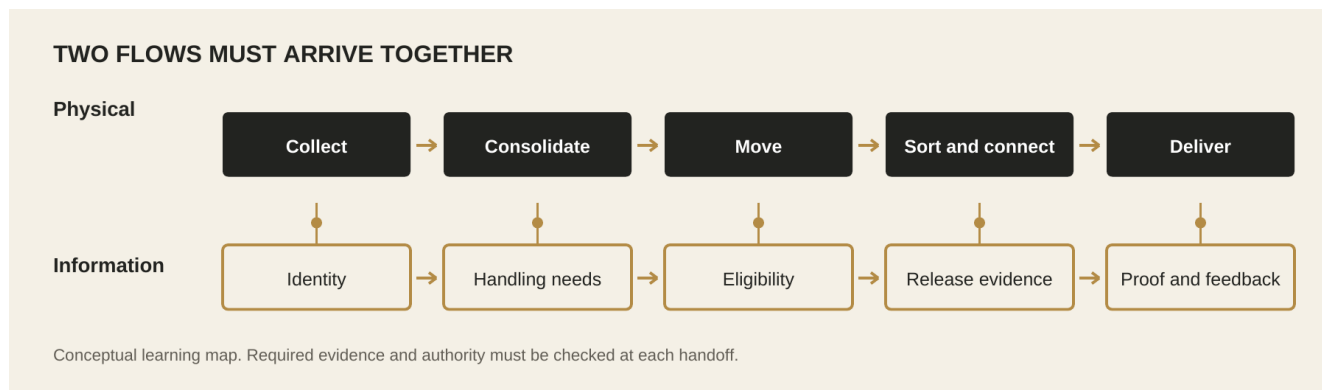
What the system teaches

A hub pools shipments from many origins, groups them by destination and connects them with onward transport. That can make a network more connected with fewer direct links, but it creates dependencies around the connection window. Early work has little value if the package misses the next usable departure; a fast physical journey still fails if the necessary data or release is absent.

As a deliberately simplified network exercise, six outlying cities need 15 two-way direct city pairs for every city to connect directly with every other city: $6 \times 5 \div 2$. Connecting each to one additional hub creates six spoke links. This compares links, not total cost, frequency, emissions or journey time. Real networks also use multiple hubs, road connections, different service products and direct routes.

The management question is therefore broader than "How fast is the conveyor?" It is: "Can the whole system make a promise it can keep, detect exceptions early and recover without bypassing a required control?"

Public system map



The diagram summarizes the physical and information flows; it is not a carrier operating model.

Shipper and order data → origin collection or acceptance → local consolidation → linehaul movement → hub receipt and sorting → destination linehaul → local delivery → proof and feedback.

Across this physical chain run parallel information flows: shipment identity, addresses, service commitment, scan events, handling needs, transport eligibility and applicable trade documentation. A scan proves only what that event records. It is not proof of customs release, dangerous-goods acceptance, product usability or successful delivery.

This map is conceptual. It omits restricted operational details and is not a representation of a particular carrier's control architecture.

2 Your fictional operating brief

Now step into a coordinator's desk-based simulation to see how floor-level work affects wider decisions. This role-play does not change your real workplace authorization. You are the shift coordinator for River City Overnight. It is Tuesday night, 13 October 2026, at a fictional Memphis-area consolidation operation. Your booking allocation on a contracted overnight movement serves an equally fictional East Gateway in the New York area.

The twelve-package practice batch weighs 110 kg. The original booking allocation is 110 kg. After disruption, only 60 kg remains available for this batch. Those small amounts are an allocation for the exercise, not the payload capacity of an aircraft.

Every package has a customer commitment of 10:30 a.m. Eastern time on Wednesday, 14 October 2026. Four carry a pre-agreed "Protect" service priority. This is a fictional commercial priority, not a clinical judgment, a legal priority or permission to bypass controls.

Operating rules for this case only

- Readiness cutoff: 23:40 on 13 October in Memphis. The package and its required release evidence must both be ready by then.
- Contracted departure: 00:10 on 14 October in Memphis.
- Planned East Gateway arrival: 03:30 on 14 October Eastern time.
- Destination route acceptance cutoff: 06:20 Eastern time on 14 October.
- Planned delivery-route departure: 06:45 Eastern time on 14 October.
- Customer promise: delivery by 10:30 Eastern time on 14 October, inclusive.
- Selection rule: first exclude unready or unreleased packages. Then load eligible Protect packages. Fill remaining allocation with eligible Standard packages in baseline-ready-time order. Never split a package.
- Your discretionary recovery spending limit is \$400 for this incident. Any higher amount requires the named duty manager's approval before commitment.
- Safety, security, applicable legal release and authorized quality disposition are hard gates. A late promise or attractive savings cannot override them.

No cargo in the twelve-row dataset is modeled as temperature-controlled medicine or dangerous goods. Section 8 explores those awareness cases separately; do not add them to the batch denominator.

Clock discipline

For the exercise dates, Memphis uses CDT, UTC−05:00; the East Gateway uses EDT, UTC−04:00. Store timestamps with dates and offsets. The midnight boundary matters. These offsets are not year-round constants.

Milestone	Local timestamp	Same instant in UTC
Memphis readiness cutoff	2026-10-13 23:40 −05:00	2026-10-14 04:40Z
Memphis departure	2026-10-14 00:10 −05:00	2026-10-14 05:10Z
East Gateway arrival	2026-10-14 03:30 −04:00	2026-10-14 07:30Z
Route acceptance cutoff	2026-10-14 06:20 −04:00	2026-10-14 10:20Z
Customer promise	2026-10-14 10:30 −04:00	2026-10-14 14:30Z

03 / FOLLOW THE EVIDENCE

3 Follow one package from beginning to end

RCO-1001 contains a fictional nonhazardous industrial replacement component, weighs 12 kg and travels from the Little Rock area through the Memphis operation to a New York-area customer. It is domestic; no import clearance is assumed for this shipment.

The following chain is its baseline plan and realized outcome in this case. Do not use these times as a real carrier's schedule.

Event	Local date and time	Evidence or decision
Order accepted	Oct 13, 15:00 CDT	Service promise, address and package identity recorded
Pickup	Oct 13, 16:30 CDT	Pickup event linked to RCO-1001
Origin acceptance	Oct 13, 17:05 CDT	Identity and approved handling information checked
Memphis receipt	Oct 13, 21:40 CDT	Hub receipt event; receiving owner identified
Sort begins	Oct 13, 22:10 CDT	Routing assignment and package ID linked
Sort complete	Oct 13, 23:05 CDT	Correct destination route confirmed
Ready for departure	Oct 13, 23:20 CDT	All exercise readiness conditions satisfied
Outbound handoff	Oct 13, 23:37 CDT	Custody handoff event recorded
Contracted departure	Oct 14, 00:10 CDT	Package included in released batch
East Gateway receipt	Oct 14, 03:30 EDT	Destination receipt linked to same ID
Delivery route starts	Oct 14, 06:45 EDT	Local delivery handoff recorded
Delivered	Oct 14, 09:50 EDT	Delivery timestamp and proof reference recorded

Questions:

1. How many minutes of readiness margin does RCO-1001 have?
2. What is the pickup-to-delivery elapsed time? Calculate using UTC, not by subtracting the two wall-clock readings.
3. What is its delivery margin to the promise?
4. What evidence would distinguish “received at the hub” from “ready for the booked movement”?
5. If a package label and a database disagree, who owns containment, correction and independent verification? Explain rather than guessing a real employer's procedure.

4 Work the twelve-package dataset

The CSV contains the complete fictional baseline and final scenario results. Start by hiding the columns beginning with “final” and “outcome” if you want to solve before checking.

Package	Weight kg	Priority	Baseline ready CDT	Later issue
RCO-1001	12	Protect	23:20	None
RCO-1002	8	Standard	23:04	None
RCO-1003	10	Standard	23:15	Weather
RCO-1004	6	Standard	23:06	None
RCO-1005	14	Protect	23:05	Wrong route detected
RCO-1006	9	Protect	23:12	None
RCO-1007	7	Standard	23:18	Weather
RCO-1008	11	Protect	23:16	None
RCO-1009	5	Standard	23:00	Import release evidence absent
RCO-1010	8	Standard	23:18	Capacity choice
RCO-1011	10	Standard	23:22	Capacity choice
RCO-1012	10	Standard	23:20	Weather

“Baseline ready” assumes the baseline conditions hold. It is not a claim that the package stayed ready after an inject. Retain baseline, revised estimate and actual timestamps as different fields.

Complete these checks before making a dispatch decision:

- Count unique package IDs and reconcile package count and total weight.
- Confirm units, timezone offsets and the promise date.
- Identify blank fields that mean unknown rather than zero.
- State whether capacity is measured by weight, volume, piece count or another constraint. This model uses weight only; volume and load compatibility would need separate checks in reality.
- Write your selection rule before looking at the final outcomes.
- Record who may release a held shipment, authorize spending and make the next customer update.

5 Four decision scenarios



Illustrated fictional setting. Follow the case text and actual employer procedures.

Scenario A Weather consumes the connection margin

At 22:50 CDT, the inbound coordinator revises the arrival forecast for RCO-1003, RCO-1007 and RCO-1012. Their fictional feeder now reaches hub receiving at 23:18. The minimum complete receipt-to-ready process for this exercise is 26 minutes. There is no pre-approved way to shorten it.

Calculate the earliest ready time and its margin against 23:40. Decide whether the packages belong in the primary booking plan. Give a customer update that states the next known milestone without inventing a confirmed delivery time. Name an alternative to investigate, the evidence required to use it and a stop condition.

Do not command aircraft or ground crews to operate through an unsafe condition. Weather forecasts and dispatch permissions are different kinds of evidence. NWS aviation information identifies hazards such as thunderstorms, icing, turbulence and visibility restrictions; the exercise gives no learner aviation-release authority. [S4]

Scenario B A physical package lacks release evidence

RCO-1009 is an international import shipment physically held under the appropriate authorized process. The supplier's commercial information does not substantiate the material description and country of manufacture needed by the authorized trade specialist. No release confirmation is recorded for onward domestic movement. The training record deliberately does not establish whether other preloading filings were complete; physical arrival proves neither preloading compliance nor import release.

The sender says, "It is only worth \$600, so just send it." Your task is to reject that unsupported shortcut, identify the missing evidence, assign the request to the supplier and trade specialist, and preserve the hold until the authorized release is recorded.

Do not invent an HS code, country of origin, duty rate, exemption or customs outcome. "Country shipped from" and "country of origin" need not be the same. Use Section 7 to build a dated source-check record. No real customer data should be entered into an external service for this exercise.

Scenario C A mis-sort threatens identity and traceability

At 23:18, RCO-1005 is found assigned to the wrong destination route. The team contains it, confirms its identity and records the exception. A second authorized checker verifies the corrected destination assignment at 23:28. The package meets every exercise readiness condition at 23:35, five minutes before the cutoff.

Separately, its origin-acceptance scan is missing from the final exported event dataset. Pickup, hub receipt, route event, outbound handoff and delivery are recorded. A signed exception record explains the missing event; it does not create a machine scan that never occurred.

Decide whether the fictional verified correction permits inclusion. Separate immediate correction from root-cause analysis. Ask what evidence would distinguish an upstream label problem, route-table problem, scan failure, training issue or handoff ambiguity. Do not assert a cause merely because it sounds plausible.

Propose a small effectiveness test, such as reviewing the next defined sample of equivalent route assignments for correct identity and destination, with a named owner and a pass criterion. State that a small zero-error sample does not prove the risk is eliminated.

Scenario D Capacity and fuel put a price on recovery

At 23:25, the provider confirms that this batch's available booking allocation is 60 kg. RCO-1005 can be included only after its verified readiness at 23:35. Weather and import holds remain as described above.

Use the case selection rule to choose the primary load. Then evaluate the following hypothetical quotes. Neither is a real offer.

Option	Extra capacity	Delivery implication	Incremental cost
Recovery movement	20 kg	East Gateway by 04:30 EDT; can meet 06:20 route acceptance if other conditions hold	\$420 base plus \$140 fuel fee = \$560
Road alternative	20 kg	Earliest East Gateway arrival 14:20 EDT on Oct 14; misses the promised 10:30 delivery	\$260
Next booked cycle	20 kg	Final delivery assumed Oct 15; no extra purchase	\$0 incremental purchase in this simplified model

Only the two capacity-deferred packages are eligible for these quotes. No option cures the weather or customs constraints, and provider capacity alone does not establish release eligibility. The quotes are assumed valid until 23:38 CDT. Your spending limit is \$400. The answer key uses no recovery purchase because higher approval does not arrive before expiry. This is a case assumption, not a recommendation to accept every service failure.

A \$55 service credit applies to each capacity-deferred package if it misses the promise. It is already included when you compare alternatives that both miss. Other credits, taxes, customer losses, labor costs and contract consequences are excluded from this simplified incremental comparison and must be identified as omissions.

Fuel exercise: the fictional movement is allocated 480 US gallons for its whole-route cost model. The practice batch is charged a fixed 10% share, or 48 gallons. This is an accounting assumption, not an aircraft fuel-burn specification. The modeled price rises from \$2.80 to \$3.50 per US gallon. Calculate the batch fuel allocation before and after, the percentage change and the fuel allocation per loaded kilogram at baseline 110 kg versus final primary load 60 kg. Explain why the per-kilogram change is not caused by fuel price alone.

6 Lead the operation with evidence

A useful coordinator does more than pick a load. The coordinator makes the tradeoffs visible, protects authorization boundaries and keeps responsibility from falling between teams.

Write a decision record with a timestamp, known facts, unknowns, hard gates, options, cost, authority, chosen action, owner, next review and evidence links. Do not backdate it. If an estimate changes, retain what was known at the original decision time.

Use these ownership roles in the fiction:

- Shift coordinator: reconciles the batch, records the plan and owns the next review.
- Transport provider: confirms usable allocation, movement timing and operational acceptance through its authorized process.
- Import or export specialist: determines applicable trade requirements and records relevant release evidence.
- Quality lead: controls nonconformity, approves the exercise's correction verification and owns the effectiveness review.
- Customer-service owner: communicates the known impact, avoids unverified promises and logs the next update.
- Duty manager: approves recovery spending above \$400 or records the decision not to spend.

Management vision exercise

Write a one-sentence operating vision that you can test, such as: "Make reliable delivery promises, detect exceptions before the connection window closes and preserve evidence at every handoff." Then choose three behaviors that would make it real: earlier document checks, a visible cutoff-risk queue and an owner for every unresolved exception.

Do not confuse the statement with a result. Show the baseline, target, trial period and review decision. An investment in automation should be evaluated against actual failure modes, integration quality, maintainability and recovery needs. Faster processing can move a bad instruction faster too.

Risk and opportunity exercise

Consider disruption outside the hub: severe weather, flood or heat exposure, supplier interruption, labor availability, airspace restrictions, border-policy changes, fuel-price volatility and dependence on one transport provider. These are categories to assess, not claims that a named company faces a specific current incident.

For each selected risk, record cause, event, consequence, existing control, trigger, accountable owner, response and residual uncertainty. Use a simple low/medium/high scale with written definitions. Do not multiply arbitrary ordinal ratings and present the product as a financial probability.

Pair at least two risks with opportunities: better pre-advice data, earlier customer cutoffs, alternative approved lanes, cross-trained staff, better exception visibility or reducing avoidable package touches. Explain cost, prerequisites and a small experiment. Resilience may add capacity or expense; environmental benefit is not automatic.

For an environmental comparison, define the boundary before choosing a metric. Record distance, mode, shipment weight, utilization, data source and reporting period. Compare both absolute emissions and intensity if valid data are available. This case supplies no emission factors and cannot support a numerical carbon claim. A lower emissions-per-kg result can coexist with higher total emissions.

7 International requirements and tariffs source lab

Trade rules depend on jurisdiction, route, commodity, origin, value, parties, intended use and effective date. This lab teaches how to ask a qualified question and preserve sources. It does not authorize a shipment or provide a tariff determination.

United States import check as of 14 October 2026

CBP's interim final rule effective 24 June 2026 suspends the \$800-or-less administrative de minimis exemption indefinitely for merchandise arriving through nonpostal modes. Applicable formal or informal entry processes remain relevant. A \$600 value alone therefore does not justify the proposed shortcut in Scenario B. This does not imply a single duty rate or identical treatment for every article. Recheck the rule and current tariff tools for a real entry. [S5]

CBP's 10 August 2026 ACAS update distinguishes preloading air-cargo data obligations from the phased enforcement of enhanced data elements, extended through 1 May 2027. Base ACAS information is due as early as practical and before loading US-bound cargo. Do not treat the extension as permission to omit all data, or imply all enhanced elements are already under full enforcement. Operational applicability belongs with the carrier and authorized trade specialists. [S6]

Other jurisdictions and exports

The European Commission's ICS2 material is the starting point for an EU-bound import security filing check. It is not interchangeable with US ACAS or US customs entry. US export work may also require screening and export-control review; BIS's compliance toolkit is a starting source, not a universal shipment approval. [S7, S8]

Complete the source-check worksheet

For RCO-1009, record:

1. Import jurisdiction and mode, relevant shipment dates and the specific decision being requested.
2. Detailed goods description, material or composition, intended use, manufacturer and substantiated origin.
3. Value and currency, parties and roles, proposed classification, valuation basis and any claimed preference or exemption, all subject to specialist validation.
4. Official source title and URL, publication date, effective date, access date and applicability notes.
5. What the source establishes, what it does not establish and any conflicting or superseded guidance.
6. The authorized specialist's determination, evidence reference, release decision and next review date.

Leave tariff rate and duty amount blank until a defensible current classification and applicable measures are established. To learn arithmetic without inventing law, use the symbolic formula "illustrative ad valorem duty = confirmed customs value × confirmed applicable rate," then explain that specific duties, additional measures, fees, valuation adjustments and exclusions can make real calculations more complex. No numeric rate is supplied in this case.

A useful supplier request asks for missing factual documentation. It does not ask the supplier to select a convenient origin or classification merely to obtain a lower charge.

8 Specialist awareness inserts

These two short inserts are separate from the twelve-package arithmetic. Their purpose is to recognize limits and route an exception to the right authority.

Insert A Medicine temperature alert

A fictional medicine consignment has a product-specific exercise instruction requiring 15–25°C during the relevant stage. A logger reports 27°C for 18 minutes. Those numbers are invented; they are not an approved range or stability conclusion for any real medicine.

Your task: stop routine release, maintain the handling conditions required by the approved procedure, separate and identify the affected consignment as appropriate, preserve logger data and custody records, and notify the authorized quality owner. Record product, lot, quantity, times, exposure, equipment, prior history and actions taken. Do not invent an instruction to freeze, re-cool, discard or use the product. Obtain a documented disposition from the responsible qualified authority.

For a real vaccine, CDC's July 2026 toolkit ties excursions to the manufacturer's product information and calls for documented response and expert assessment. That source concerns vaccines; it does not set universal limits for all medicines. WHO's model guidance likewise supports control and qualified disposition of temperature-sensitive products, subject to applicable local law. [S9, S10]

Questions: Which observations are established? Which stability questions remain open? Who can decide usability? What would prove the response was completed and the logger evidence preserved?

Insert B Uncertain dangerous goods

A shipper describes a package only as “equipment with spare battery.” You do not know its regulated status, contents or approved transport conditions. Pause acceptance into the assumed nonhazardous stream and route the inquiry to the authorized dangerous-goods specialist using the employer's approved process.

The FAA notes that an overnight shipment can travel by air and that the shipper must identify applicable hazardous-material requirements. PHMSA explains that relevant hazmat employees need appropriate training, including function-specific requirements. This learning case is not that training and supplies no classification, packing, labeling or aircraft-loading recipe. [S11, S12]

Questions: What information should the trained specialist request? Who records acceptance or refusal? How will the customer be given a realistic next step without promising that a package will fly?

9 Worked answer key

Package journey and time

RCO-1001 is ready at 23:20 CDT, leaving 20 minutes to the 23:40 cutoff. Pickup is 21:30Z on 13 October; delivery is 13:50Z on 14 October. Elapsed time is 16 hours 20 minutes. Delivery at 09:50 EDT is 40 minutes before the 10:30 promise. The planned flight leg is 05:10Z to 07:30Z, or 2 hours 20 minutes.

Readiness requires the physical package plus the evidence and checks required by this fictional process. A hub receipt alone only proves receipt. The record must identify who verified the destination, eligibility and custody handoff; unresolved conflicts remain contained until an authorized correction is verified.

Weather

23:18 + 26 minutes = 23:44 CDT. The three weather-affected packages miss readiness by four minutes and total 27 kg. They cannot be put in the primary selection simply because the flight has not yet departed. The readiness cutoff and departure time serve different purposes in the model.

A defensible update is: "The revised inbound timing misses tonight's booked connection. We are checking the next authorized option and will update you at [confirmed time]. Delivery timing is not yet confirmed." Replace the bracket with an actual chosen update time before using a draft. Do not send this exercise text to a real customer.

Import data

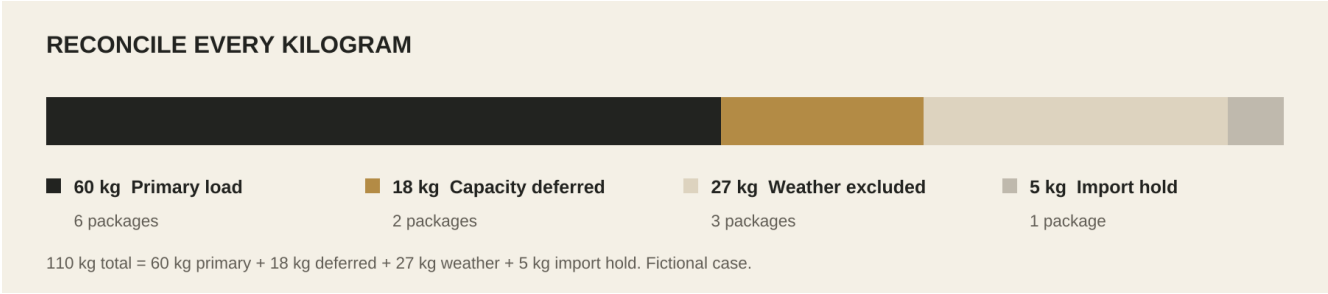
RCO-1009 contributes 5 kg to the held weight. The correct action is to retain the hold, request factual substantiation and obtain the authorized specialist's release decision. The dataset does not support a tariff rate or release estimate. A low declared value, a scan event or the sender's confidence is not enough.

Mis-sort and traceability

RCO-1005 becomes eligible at 23:35 after the verified correction, five minutes before cutoff. That conclusion depends on the scenario's explicit readiness and verification evidence. If those facts were missing, it would remain held.

Correcting the route is immediate correction. Preventing recurrence requires supported cause analysis, an action matched to that cause and an effectiveness review. Keep the missing origin-acceptance scan visible. The signed exception explains a gap but must not be relabeled as a recovered machine scan.

Capacity reconciliation



Worked outcome for the fictional twelve-package batch.

Reconciliation	Packages	Weight kg
Full batch	12	110
Weather excluded	3	27
Import hold excluded	1	5
Eligible after gates	8	78
Primary load	6	60
Capacity-deferred remainder	2	18

Protect packages RCO-1001, 1005, 1006 and 1008 total 46 kg. The remaining allocation is 14 kg. The first two eligible Standard packages in the defined order are RCO-1002 at 8 kg and RCO-1004 at 6 kg. The total primary load is exactly 60 kg. RCO-1010 and RCO-1011, totaling 18 kg, remain deferred.

This is a rule-consistent answer, not proof of globally optimal routing. Changing customer priorities or using volume, contractual penalties and route compatibility could change the decision. State changed assumptions before presenting a different load.

Recovery comparison

The recovery quote can carry the 18 kg remainder within its 20 kg limit and its stated gateway arrival precedes route acceptance by 1 hour 50 minutes. Meeting that gateway cutoff makes the promised service feasible under the case assumptions; it is not a guarantee against all downstream failure.

At \$560, recovery exceeds the coordinator's authority by \$160. Seek timely duty-manager approval. Under the answer-key assumption, approval does not arrive before the quote expires, so no recovery purchase is made.

Next cycle purchase cost is \$0 plus two \$55 credits = \$110 within this restricted comparison. Road costs \$260 plus the same \$110 credits = \$370 and still misses the promise. Recovery costs \$560 and avoids those credits, so it costs \$450 more than next cycle and \$190 more than road in this model. Relative to next cycle, management would need more than \$450 of additional avoided consequences, or \$225 per deferred package, to show a strictly positive monetary benefit from recovery. Exactly \$450 is break-even. Omitted consequences can still justify a different management decision; document them rather than inventing them.

Fuel and utilization

Batch share: $480 \text{ gallons} \times 10\% = 48 \text{ gallons}$. Baseline allocation: $48 \times \$2.80 = \134.40 . Revised allocation: $48 \times \$3.50 = \168.00 . Increase: \$33.60, or 25%.

At baseline 110 kg, fuel allocation is \$1.22/kg rounded to cents. At final primary load 60 kg, it is \$2.80/kg. Using unrounded values, the per-kg increase is 129.17%. This combines a price rise with a smaller loaded denominator under the fixed-share assumption; it is not a 129.17% fuel-price rise. Recovery quote fuel fees are separate and must not be counted again in the primary movement's pool.

Final observed service and data KPIs

The fictional final dataset records six deliveries on time on 14 October and six late deliveries on 15 October. It assumes no recovery purchase and no other change. It is a teaching outcome, not an observed carrier result.

- Customer on-time delivery: $6 \div 12 = 50.00\%$. Keep all twelve committed packages in the denominator, including holds; also report the reasons.
- Primary acceptance among gate-eligible packages: $6 \div 8 = 75.00\%$. This operational measure is not customer on-time delivery.
- Readiness by cutoff with required release: $8 \div 12 = 66.67\%$.
- Booking-allocation utilization: $60 \div 60 = 100.00\%$. This says nothing about total aircraft utilization and does not make the customer result satisfactory.
- First-pass correct routing: $11 \div 12 = 91.67\%$. RCO-1005 required correction.
- Required scan completeness: $71 \text{ recorded scans} \div 72 \text{ expected scans} = 98.61\%$. Six required scan types are counted for each of twelve completed shipment records.
- Shipments with all six required scans: $11 \div 12 = 91.67\%$. This is a different unit and denominator from event completeness.

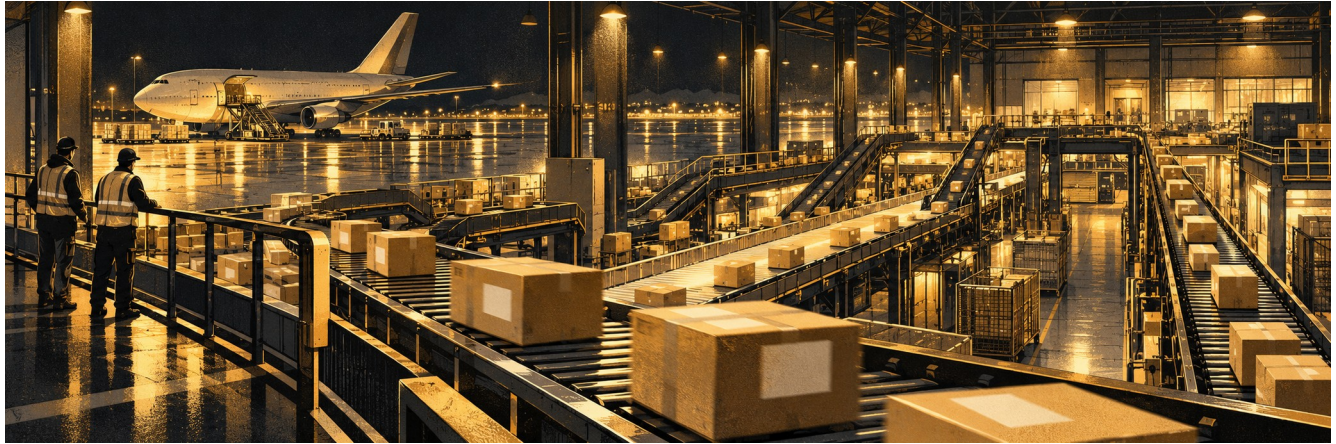
The six required scan types are pickup, origin acceptance, hub receipt, route event, outbound handoff and delivery. The scan export is a completed-record snapshot after all twelve deliveries on 15 October; it is not a midnight snapshot in which future delivery events would be wrongly labeled missing.

Example decision record

Decision D-01, recorded 23:36 CDT on 13 October 2026. Evidence: current allocation confirmation, weather-ready forecast, import hold, verified route correction and quote expiry. Eligible load is 78 kg; allocation is 60 kg. Load the four Protect packages plus RCO-1002 and RCO-1004. Keep weather and import exclusions outside the release plan. Request \$560 recovery authorization for RCO-1010 and RCO-1011 before 23:38. Without approval, do not commit that purchase; use the next booked cycle and notify the customer-service owner.

At 23:39, record that approval did not arrive before expiry and close the quote as unused. Customer-service owner issues the confirmed impact and next update time. Quality lead follows up the route correction and missing event. Import specialist retains responsibility for the release hold. The decision review checks whether escalation started early enough; it does not retroactively pretend that approval existed.

10 Build a portfolio that shows your thinking



Illustrated fictional setting. Follow the case text and actual employer procedures.

Use the blank templates in the templates folder. Produce a concise final packet with your name, date, version and the prominent label “Independent fictional case study.” Include your original calculations and explanations, not just the answer key.

Recommended packet:

- One-page system map showing physical and information flows, controls and owners.
- One-page decision memo with the selected load, rejected options, assumptions and escalation.
- KPI register with at least six metrics, units, numerator, denominator, owner, source, cadence and a gaming risk.
- Risk log with five relevant risks, two opportunities and evidence-based responses.
- Completed contingency checklist and one sample quality correction/effectiveness record.
- Source-check record for the import question, with unresolved tariff fields visibly blank.
- Reflection explaining one assumption you changed and how it changed the answer.

Assessment rubric

Score each area 0–4, then multiply by its weight divided by four. A score of 0 has no usable evidence; 1 is mostly incomplete; 2 is partly correct but misses a material issue; 3 is correct and adequately supported; 4 is correct, clear, reproducible and discusses limitations.

Area	Weight	What strong evidence includes
System and clock reasoning	15	Parallel flows, correct dates and UTC conversions
Data and calculations	20	Reconciled 110 kg, correct gates, formulas and units
Decision and authority	20	Rule-consistent load, timely escalation, clear unknowns
Quality and traceability	15	Honest gap handling, correction versus cause, effectiveness test
Trade and specialist boundaries	15	Current primary sources, no invented rate or release
Risk and communication	10	Owners, triggers, realistic updates and alternatives
Portfolio clarity	5	Fictional label, sources, readable original reasoning

An 80/100 self-score is only a suggested learning target. Any proposal to bypass a safety or legal gate, fabricate evidence, make unauthorized medical disposition or hide a late shipment requires revision regardless of total score. A self-score is not an accredited grade or employer assessment.

Honest resume and interview language

After actually completing and checking your own work, a defensible bullet is: “Built an independent fictional overnight-cargo case study; reconciled 12 shipments and 110 kg, modeled cutoff and capacity constraints, and produced a process map, KPI register, risk log and evidence-based recovery decision.”

Do not claim that you managed FedEx operations, handled live international clearance, received accredited training or achieved the case's fictional results in employment. In an interview, explain your assumptions, show your calculations and discuss what you would need to learn in the employer's actual system.

This exercise can support beginner conversations about logistics coordination, operations analysis and quality support. Role requirements vary. Employer procedures, practical experience and any required regulated-role training remain separate. For example, an awareness exercise cannot substitute for a dangerous-goods employee's required training or authorization.

11 Connect this case to the existing learning routes

The existing QMS and supply-chain pack remains unchanged. Use this case as an additional applied exercise after its shared foundations, not as extra automatically earned hours.

- C01 system and history: use Sections 1–3 and the parallel-flow map.
- C02 documents and competence: use evidence fields, role boundaries and the source check.
- C03 process KPIs: calculate and critique the seven metrics in Section 9.
- C04 nonconformity: develop the mis-sort correction and effectiveness test.
- C05 traceability: reconcile package IDs, event completeness and the missing scan.
- S10 disruption response: defend the load and recovery decision.
- A01 interacting risks and opportunities: stress-test weather, capacity and data readiness together.
- A02 metric quality: explain why 100% allocation use can coexist with 50% on-time delivery.
- SA03 constrained network: change one constraint, recalculate and document the effect.

Open the [existing route plan](#) and the [earlier parts case](#). Do not count the same activity twice across learning routes. An instructor or learner should record actual study time separately from these planning suggestions.

Plain language glossary

- Allocation: the share of space or weight capacity available to this batch.
- Baseline: the starting plan used for comparison when conditions change.
- Bottleneck: a step whose limited ability restricts the flow of the wider process.
- Capacity: how much a process or movement can handle under stated conditions; it is different from what it actually handles.
- Containment: keeping a known or suspected problem from moving onward while the right person evaluates it.
- Correction: fixing the immediate error. Corrective action addresses a supported cause to reduce recurrence.
- Cutoff: the latest time by which a defined condition must be met.
- Custody: who has responsibility for an item at a particular stage.
- Denominator: the total group you divide by to calculate a rate; changing it can change the story.
- Disposition: an authorized decision about what happens to an item after review.
- Escalation: taking an issue to the person with the responsibility or authority to decide it.
- First pass: the initial attempt, before rework or correction.
- Hub: a place where flows come together and are redirected to destinations.
- KPI: key performance indicator, a defined measure used to judge a process.
- Linehaul: the longer transport leg between facilities, distinct from local collection or delivery.
- Mis-sort: assignment or movement to the wrong destination path.
- Nonconformity: a requirement has not been met.
- Origin: in trade work, the country of origin is established under applicable rules; it is not automatically the place of dispatch.
- Release: an authorized decision that the relevant conditions for the next step are satisfied.
- SOP: standard operating procedure, the employer's approved instructions for a defined task.
- Throughput: the amount actually processed over a stated period.
- Traceability: the ability to connect an item to its identity, events, custody and relevant records.
- UTC: a common time reference that helps compare events across time zones.

12 Source register

Sources support only the public statements identified above. They do not validate the fictional dataset, costs or outcomes. Access check: 14 October 2026. Recheck live rules before applying them to a real shipment.

S1. FedEx, "FedEx Unveils New Automated Sorting Facility at Memphis World Hub," 30 October 2024. Dated company-reported hub scale and automation context.
<https://newsroom.fedex.com/newsroom/global-english/fedex-unveils-new-automated-sorting-facility-at-memphis-world-hub>

S2. FedEx, "FedEx Speeding Valentine's Day with Aid of FAA's NextGen Program," 13 February 2015. Historical flight-movement wording and unit-check exercise. <https://newsroom.fedex.com/newsroom/united-states/fedex-speeding-valentines-day-aid-faas-nextgen-program>

S3. Wendover Productions video, "How Overnight Shipping Works," video reference identified during research. Optional conceptual viewing; not a primary regulatory source or reproduced text. <https://www.youtube.com/watch?v=y3qfe0qErtY>

S4. National Weather Service, Aviation Weather Safety, Memphis Center Weather Service Unit. Aviation hazard awareness. <https://www.weather.gov/zme/safety>

S5. US Customs and Border Protection, "Indefinite Suspension of the De Minimis Exemption for Merchandise Arriving Through All Modes Other Than the International Postal Network," interim final rule, effective 24 June 2026, 91 FR 37789. Nonpostal US import scope; check amendments and current applicability.
<https://www.govinfo.gov/content/pkg/FR-2026-06-24/pdf/2026-12670.pdf>

S6. US Customs and Border Protection, ACAS phased enforcement update, 10 August 2026. Timing distinction for base and enhanced air-cargo data. <https://content.govdelivery.com/accounts/USDHSCBP/bulletins/42447cc?reqfrom=share>

S7. European Commission, Import Control System 2. EU-specific import security starting point. https://taxation-customs.ec.europa.eu/customs/customs-security/import-control-system-2_en

S8. US Bureau of Industry and Security, Export Compliance Toolkit. US export-control compliance starting point. <https://www.bis.gov/learn-support/export-compliance-programs/export-compliance-toolkit>

S9. US Centers for Disease Control and Prevention, Vaccine Storage and Handling Toolkit, July 2026, PDF pages 17–18, printed pages 15–16. Vaccine-specific excursion response.
<https://www.cdc.gov/vaccines/hcp/downloads/storage-handling-toolkit.pdf>

S10. World Health Organization, Model guidance for the storage and transport of time- and temperature-sensitive pharmaceutical products, 2011, section 3.4.3. Model quality and quarantine principles; local law prevails.
https://cdn.who.int/media/docs/default-source/medicines/norms-and-standards/guidelines/inspections/trs961-annex9-modelguidanceforstoragetransport.pdf?download=true&sfvrsn=66be1860_2

S11. US Federal Aviation Administration, How to Ship Dangerous Goods. Air-transport awareness and trained-shipper responsibilities. https://www.faa.gov/hazmat/safecargo/how_to_ship

S12. US Pipeline and Hazardous Materials Safety Administration, Hazardous Materials Training Requirements, updated 15 January 2025. Function-specific and other applicable training responsibilities.
<https://www.phmsa.dot.gov/about-phmsa/hazardous-materials-training-requirements>

S13. FedEx, Company history, current undated historical account. Founding-night figures and reasons given for selecting Memphis. <https://www.fedex.com/en-us/about/history.html>