

# ATC Crisis Management System – Common Failure Scenarios

## Purpose

This document describes **known and expected failure scenarios** within the ATC Crisis Management System, how they present operationally, and how to respond. It is intended to reduce troubleshooting time and prevent overreaction during live incidents.

This document focuses on **symptoms and response**, not implementation details.

---

## 1. Microsoft Graph Throttling or Temporary Outage

### Symptoms

- Teams notifications intermittently fail
- Leadership alerts are delayed or missing
- Power Automate runs show HTTP 429 or transient Graph errors

### Why This Happens

- Microsoft Graph enforces rate limits
- Throttling is more likely during:
  - Widespread outages
  - High-traffic business hours
  - Multiple notifications in short succession

### System Behavior

- Primary Teams posting may fail
- Fallback notification paths may activate
- Some notifications may be delayed rather than lost

### Response

- Do **not** retry repeatedly in rapid succession
  - Allow time for throttling window to clear
  - Manually re-run failed notification flows if needed
-

## 2. SharePoint Attachment Failures

### Symptoms

- Incident record exists
- One or more photos are missing

### Why This Happens

- Temporary SharePoint service latency
- Attachment loop interrupted by transient failure

### System Behavior

- Item creation may succeed even if attachments fail
- Notifications may still post without images

### Response

- Re-run attachment steps for the affected item
  - Verify attachment size limits were respected
  - No data corruption occurs
- 

## 3. Teams Message Posted Without Images

### Symptoms

- Teams message appears
- Images are missing or shown as broken links

### Why This Happens

- Hosted content preparation failed
- Image content type could not be resolved
- Graph posting partially succeeded

### System Behavior

- Message posts without images rather than failing entirely
- SharePoint item remains intact

### Response

- This is a **non-blocking failure**
  - Do not attempt to repost unless images are critical
-

## 4. Leadership Alerts Sent to Fewer Recipients Than Expected

### Symptoms

- Some leaders report receiving alerts
- Others do not

### Why This Happens

- Group membership changes
- Job title filtering removed recipients
- Deduplication logic eliminated duplicates

### System Behavior

- Alerts are intentionally conservative
- No duplicate alerts are sent

### Response

- Verify group membership in Entra ID
  - Confirm job titles have not changed unexpectedly
- 

## 5. User Receives "Unauthorized" or "Not Allowed" Response

### Symptoms

- App submission rejected
- HTTP 403 returned

### Why This Happens

- User account disabled
- Token expired or invalid
- Authorization header missing or incorrect

### System Behavior

- Processing stops immediately
- No partial data is written

### Response

- Confirm user is active in Entra ID
  - Have user re-authenticate
  - Do not override this behavior
-

## 6. Offline Submission Appears to Do Nothing

### Symptoms

- User submits form
- No immediate confirmation

### Why This Happens

- Device is offline
- Network connectivity is degraded

### System Behavior

- Submission is cached locally
- Automatically retried when connectivity returns

### Response

- Instruct user not to resubmit repeatedly
  - Confirm submission once connectivity is restored
- 

## 7. Duplicate Prevention Blocks a Repost

### Symptoms

- Attempted repost is ignored
- Flow reports item already processed

### Why This Happens

- Item marked as posted
- Duplicate protection engaged

### System Behavior

- Duplicate messages are blocked intentionally

### Response

- Manually clear posted flag only if absolutely necessary
  - Avoid reposting during live incidents
-

## 8. Version Mismatch or Forced Reload

### Symptoms

- App reloads unexpectedly
- User prompted to refresh

### Why This Happens

- New version deployed
- Service worker detects version mismatch

### System Behavior

- App forces reload to ensure consistency

### Response

- This is expected behavior
  - No action required
- 

## 9. What Is *Not* a Failure

The following are expected behaviors: - Slight notification delays - Missing images during high load - Leadership receiving alerts in different order

These do not indicate data loss or system instability.

---

## Operational Guidance

During live crises: - Prioritize message delivery over perfection - Avoid experimental fixes - Assume redundancy will recover transient issues

The system is designed to degrade safely, not silently fail.