

PROFESSIONAL REFERENCE

Crew Duty Time (CDT) User Manual

Crew duty / rest / flight-time calculator

Version 1.1 - iPhone Operating System (iOS) 26 / Apple Watch
Operating System (watchOS) 26

Flight crew
primary audience

Company rules
configured in Settings

iPhone + Watch
operational workflow

Use this manual to set up company rules, enter planned and actual duty data, read legality surfaces, use Watch input, and understand notification behavior.

Crew Duty Time (CDT) is a short-term reference tool for flight crew. Cabin limits are reference-only. Always follow your company manual, Operational Flight Plan (OFP), dispatch instructions, and applicable regulations.

Start with Settings, then enter planned route data, then actual times. This PDF is the full reference manual; in-app Help is a short workflow summary.

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Use the in-app Help for the short flow. Use this manual for full setup notes, examples, and operational checks.

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Version: Crew Duty Time (CDT) 1.1

System requirements: iPhone Operating System (iOS) 26 / Apple Watch Operating System (watchOS) 26

Audience: Flight crew. Cabin crew limits shown in CDT are reference-only and are not the primary legality source.

This manual is written for a first-time user. Work through the setup sequence before entering a duty. Crew Duty Time (CDT) results depend on your company rules, report rules, taxi assumptions, Maximum Flight Duty Period / Flight Duty Time (Max FDP / FDT), Maximum Flight Time (Max FT), Latest Block Out (LBO) thresholds, rest matrix, Additional Crew Member / positioning (ACM) handling, and notification settings.

Abbreviations and full names

Use this section when a label appears as an abbreviation in the app or in this manual.

- CDT: Crew Duty Time.
- iOS: iPhone Operating System.
- watchOS: Apple Watch Operating System.
- STD: Scheduled Time of Departure.
- STA: Scheduled Time of Arrival.
- ACT OUT: Actual Out / actual block-OUT time.
- ACT IN: Actual In / actual block-IN time.
- RPT: Report / report time.
- DLY: Delay / delayed state.
- FDP: Flight Duty Period.
- FDT: Flight Duty Time.
- Max: Maximum.
- Max FDT: Maximum Flight Duty Time.
- FT: Flight Time.
- Max FT: Maximum Flight Time.
- 24h: 24 hours.
- T-60, T-10: Time remaining until the event, for example 60 minutes or 10 minutes before report or scheduled departure.
- Plan FT: Planned Flight Time, normally the Operational Flight Plan sector flight time.
- LBO: Latest Block Out, the latest legal push / off-block reference used by CDT.
- CAUT: Caution.
- ALRT: Alert.
- IMPOSS: Impossible.
- UTC: Coordinated Universal Time.
- Z: Zulu time, meaning Coordinated Universal Time.
- HHMM / HH:MM: Hours and minutes format.
- HUD: Heads-Up Display.
- OFP: Operational Flight Plan.
- ACARS: Aircraft Communications Addressing and Reporting System.
- ACM: Additional Crew Member / positioning sector in CDT context.

- Pos: Positioning.
- ULR: Ultra Long Range.
- C1, C2, C3: Class 1, Class 2, and Class 3 aircraft rest facility.
- Ops: Operations.
- Ext.: Extended or extension.
- Min: Minimum.
- M.: Morning, used in compact labels such as Early M.
- TZ: Time Zone.
- Diff: Difference.
- Ref: Reference.
- Dep: Departure.
- Cond: Conditional.
- Sched: Scheduled.
- Act: Actual.
- OUT: block-OUT / off-block departure-side event in CDT field names.
- IN: block-IN / on-block arrival-side event in CDT field names.
- IATA: International Air Transport Association.
- ICAO: International Civil Aviation Organization.
- FOM: Flight Operations Manual.
- OM–A: Operations Manual Part A.
- CBA: Collective Bargaining Agreement.
- JSON: JavaScript Object Notation.
- TX: Taxi, commonly used in compact labels such as taxi-out or taxi-in.
- SIM: Simulator / simulator duty code.
- SBY: Standby duty code.
- DO: Day Off duty code.

1

What CDT is for

Crew Duty Time (CDT) is a short-term duty, rest, and flight-time calculator. It is intended to help you assess one duty and the next-duty rest window. It is not a monthly roster planning system, and it does not replace company manuals, Operational Flight Plan (OFP), dispatch instructions, or applicable regulations.

CDT helps you see:

- The timing relationship between Report, Scheduled Time of Departure (STD), Scheduled Time of Arrival (STA), Actual Out (ACT OUT), and Actual In (ACT IN).
- Whether Maximum Flight Duty Time / Flight Duty Period (Max FDT / FDP) is close to or beyond the configured limit.
- Whether Maximum Flight Time (Max FT) in 24 hours is close to or beyond the configured limit.
- Whether Latest Block Out (LBO) is normal, caution, alert, or impossible.
- The earliest legal report for the next duty.
- Planned in-flight rest distribution for augmented duties.
- Critical duty reminders on Lock Screen, Dynamic Island, notification, and Apple Watch.

Basic workflow:

- 1 Configure company rules in Settings.
- 2 Build or load a route.
- 3 Enter STD, STA, and Plan FT for each sector.
- 4 During operation, enter ACT OUT and ACT IN in sequence.
- 5 Review HUD, sector cards, LBO, Max FDT, Max FT, and Next Duty Planner.
- 6 Use Apple Watch or Lock Screen surfaces for quick viewing and input when appropriate.

Main Screen Styles in CDT 1.1

CDT 1.1 supports five selectable main screens from Settings > Main Screen. These screens are different presentation styles over the same calculation engine. If the same route, settings, crew type, and actual times are entered, legal/status results must match across all styles.

- **Flight Card**: the full detailed card workflow.
- **Card+**: a compact card workflow. Its top status row uses **FT REM** and **FDT REM**.
- **Dash Board**: a status-first surface with the restored semi-circle duty ring. The RPT-side status area uses **Max FDT** and **Max FT**.
- **Ticket**: a dense ticket-style surface. **Single**, **Multi**, and **Double** crew controls are tappable controls, not static labels.
- **Flight Strip**: a strip-style operational scan view. Its status row uses **FT REM** and **FDT REM** instead of next-report / next-duty text.

RPT controls belong with the current RPT value. **RPT LOCK** freezes the current report value, while the RPT detail surface remains available for reviewing the report calculation. The Next Duty Planner is for the next duty context; it should not be the only place to reach current RPT lock/detail behavior.

The In-Flight Rest Planner must keep the same core fields in every UI style that opens it. Block-off time is editable from those planner surfaces, and changing it recalculates the rest plan from the same duty state.

Key time terms:

- **STD**: Scheduled Time of Departure.
- **STA**: Scheduled Time of Arrival.
- **ACT OUT**: Actual Out, meaning actual block-OUT / aircraft movement out time.
- **ACT IN**: Actual In, meaning actual block-IN / aircraft in time.
- **Plan FT**: Planned Flight Time from the Operational Flight Plan (OFP) sector flight time. Do not enter block time here.
- **Default Taxi OUT / Default Taxi IN**: Settings values used by CDT for scheduled block / flight timeline estimates. Do not add taxi time again into Plan FT.

2

Set company rules first

Company rule setup comes first

Do this before entering route and actual times.

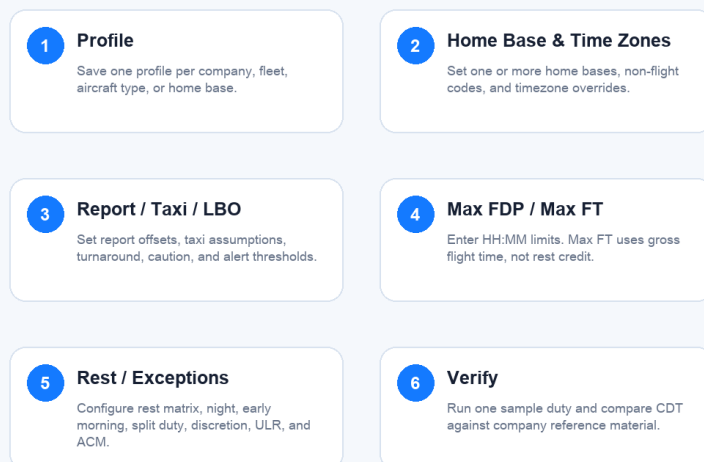


Figure 1. Recommended setup order before using CDT operationally.

Open Settings before entering operational data. The safest setup order is company rules first, route and duty data second.

2.1 Profiles & Presets

Use this section to manage company-rule profiles.

- **Default Settings:** Restore app defaults. Use this only when you want to start over.
- **Load Local Profile...**: Load a profile saved inside the app.
- **Save Local Copy...**: Save the current settings as a local profile.
- **Import Settings...**: Import a JSON settings profile from Files.
- **Export Current Settings...**: Export the current settings as reusable JSON.

Suggested profile names:

- Company A – A320
- Company A – B777
- Company B – Long Haul

Important: A Settings profile stores rules and preferences. It is not a route or duty backup. Keep route / duty data separate from settings profiles.

2.2 Default Route Setup

Route presets create a starting route. Examples:

```
TPE, HKG, TPE
TPE, NRT, TPE
TPE, LAX, TPE
```

A valid duty needs at least two stations, such as TPE, HKG.

2.3 Home Base & Codes

- **Home Base:** Add one or more home base station codes, such as TPE or TPE, KHH when your company treats multiple stations as home bases. When the final arrival is not one of the configured home bases, CDT applies outstation rest logic where configured.
- **Custom Non-Flight Codes:** Enter non-flight duty codes such as SIM, SBY, DO, separated by commas.

If your company uses different rules by base, save separate profiles for each base or fleet. Do not rely on a single profile when report offsets, rest rules, or transport assumptions differ between bases.

2.4 Airport Timezone Overrides

CDT uses bundled airport timezone data. Use manual overrides for special airport codes, training locations, company-defined codes, or any station whose local-time behavior needs correction.

Format:

```
HKG=Asia/Hong_Kong, KXYZ=America/Chicago
```

You may use IATA or ICAO codes. Separate multiple entries with commas.

2.5 Aircraft Rest Facility

Select the aircraft rest facility used by your duty:

- C1: Class 1 rest facility.
- C2: Class 2 rest facility.
- C3: Class 3 rest facility.

If your company defines different FT caps for C2 and C3, enable `Separate C2 / C3 FT Cap` and configure:

- C2 FT Cap
- C3 FT Cap

If your company uses one common non-C1 limit, keep it off and configure:

- Non-Class 1 FT Cap

CDT uses gross flight time for Max FT in 24h. In-flight rest credit does not reduce Max FT.

2.6 Report, Ground & LBO

This section directly affects report time, turnaround, taxi, and LBO.

- Flight Crew Specific RPT: Build flight crew report rules by route, aircraft type, or company condition.
- Default Home Base RPT: Default home-base report offset.
- Default Outstation RPT: Default outstation report offset.
- Min Turnaround: Minimum company turnaround.
- Turnaround Warning: Warn when turnaround is below minimum.
- Default Taxi OUT: Default taxi-out minutes for new sectors.
- Default Taxi IN: Default taxi-in minutes for new sectors.
- LBO Caution Threshold: Remaining LBO below this value becomes caution.
- LBO Alert Threshold: Remaining LBO below this value becomes alert.

Taxi settings are critical. When you enter STD, STA, and Plan FT, do not add taxi time into Plan FT again.

2.7 Max FDP Limits

Configure the duty limit for:

- Single Crew
- Multi Crew
- Double Crew
- Landing Cap

If your company uses limits such as 12:30, enter HH:MM. Do not round to a whole hour.

2.8 Max FT in 24h

Configure rolling 24-hour flight-time limits:

- Single Crew FT
- Multi Crew FT
- Double Crew FT
- Single+Night Max FT
- Require Multi/Double Dispatch

Rules:

- Max FT in 24h uses gross FT.
- In-flight rest does not reduce Max FT.
- ACM contribution depends on Count ACM in FT.
- Single, Multi, and Double crew can have separate caps.
- C2 and C3 can share one non-C1 cap or use separate caps.

2.9 Minimum Rest Matrix

Configure minimum rest before the next duty:

- Single Crew Rest
- Multi Crew Rest
- Double Crew Rest
- Enable Rest Downgrade

Rest matrix rules are company-specific. Confirm thresholds, below-threshold rest, above-threshold rest, and any downgrade behavior against your company manual.

2.10 Special Exceptions

Use this section for night, early morning, split duty, transport, discretion, and similar company rules.

- Night Ops Start (Local)/Night Ops End (Local)
- Night Ops Penalty
- Early M. Start (Local)/Early M. End (Local)
- Early M. (2 Days) Rest
- Early M. (3 Days) Rest
- Early M. (Exempt) Rest
- Split Duty Min Rest
- Transport Each Way

- Credit Before Dep
- Credit After Dep
- Ext FDT (Discretion)

There is no universal value for these fields. Use your FOM, OM-A, CBA, company manual, or regulatory source.

2.11 ACM / Positioning

This controls whether positioning / deadhead / ACM sectors count toward FDT, FT, sectors, and landings.

ACM → FDT modes:

- Duty: ACM does not enter FDT.
- Cond: Apply the conditional rules below.
- All: ACM always counts toward FDT.

Conditional options:

- Count before operating leg
- Count between operating legs
- Count after final operating leg
- ACM-only day counts as FDT

Additional options:

- Count ACM in FT
- Count ACM as sector / landing

If your company treats positioning as duty but not flight time, do not enable Count ACM in FT.

2.12 ULR & Long Layover

Use this for ultra-long-range rules, long layover handling, and timezone-driven rest effects.

- ULR Trigger: Manual or City Pair.
- ULR FT Threshold: Flight-time threshold for ULR candidate sectors.
- ULR City Pairs: For example TPE-JFK, TPE-YYZ.
- Require Double for ULR
- ULR Ext. FDT (Home)
- ULR Ext. FDT (Out)

- Local Night Cutoff Hour
- ULR Rest (Home)
- ULR Rest (Outstation)
- Long Layover TZ Trigger
- Long Layover Penalty
- Exemption TZ Diff

If your company applies ULR rules only to specific routes, prefer `City Pair` instead of a flight-time threshold alone.

2.13 In-Flight Rest Planner

Configure the protected buffer around rest windows:

- FT Start Buffer
- FT End Buffer
- STD Start Buffer
- STA End Buffer

Example: If company practice requires at least 30 minutes after takeoff before rest starts, set the start buffer accordingly.

2.14 Lock Screen & Live Activity

These settings control Lock Screen, Dynamic Island, and local notifications.

- Auto-start in Critical Windows: Start or schedule status surfaces during critical windows.
- Show Quick Actions: Show quick action controls when available.
- Privacy Mode: Control how much detail appears on Lock Screen.

CDT reminder surfaces focus on three phases:

- 1 Report countdown before report.
- 2 After report and before STD, focusing on the ACT OUT action window.
- 3 After STD and before ACT OUT, showing DLY elapsed time.

After ACT OUT is entered, that sector's countdown-style Lock Screen / Dynamic Island content stops.

Platform limit: Local notifications can be scheduled for the future. Dynamic Island / Live Activity cannot always create itself if the app has no execution opportunity. The most reliable practice is to open CDT within about 1 hour before report.

2.15 Cabin Crew Reference

Cabin crew limits are reference-only in CDT.

- Show Cabin Limit
- Base Cabin FDP Ref
- Class 1 Augmented Ref
- Extended Cabin FDP Ref
- Cabin report rules / reference rules

CDT's primary legality flow is flight-crew-first. Cabin display should be used only as a cross-check. In CDT 1.1, cabin reference limits should remain visible or reachable from the main UI / detail surfaces, not only appear as caution or alert text after a threshold is reached.

3

Build a duty

Clock time vs duration

Most input mistakes come from mixing these two concepts.



Figure 2. Clock-time fields and duration fields must be handled differently.

3.1 Build a route

Use a route preset or manually edit station codes.

Example:

TPE → HKG → TPE

This creates two sectors:

- 1 TPE → HKG
- 2 HKG → TPE

At least two stations are required to create one sector.

3.2 Enter STD / STA

Enter scheduled times on station cards:

- Departure station: enter STD.
- Arrival station: enter STA.

Check UTC / local mode next to each field. For midnight crossing or timezone changes, confirm both the duty date and local-time context.

CDT uses Default Taxi OUT / Default Taxi IN when estimating the scheduled block / flight timeline. Do not add taxi time into Plan FT.

3.3 Enter Plan FT

Plan FT is the OFP sector flight time.

Example:

OFP sector flight time: 01:35
Plan FT: 0135

Do not enter block time. Do not add taxi-out or taxi-in time into Plan FT.

3.4 ACM / Positioning leg

The flight leg card can be changed from FLIGHT LEG to ACM (Pos). Use this only for positioning / deadhead / ACM sectors.

Whether ACM counts toward FDT, FT, sectors, or landings depends on ACM / POSITIONING settings.

4

During operation

4.1 Before report

Before report, CDT shows report countdown. There is no iPhone field for actual report time.

If Lock Screen / Live Activity is enabled, the critical pre-report window can show:

- Route
- Current phase
- Expected time
- Countdown

4.2 After report and before STD

The main task in this phase is preparing to enter ACT OUT.

Around STD T-10, if ACT OUT is still blank, Lock Screen, Dynamic Island, or Watch may enter the action window. A NOW or action button may appear for quick current-time entry.

4.3 After STD before ACT OUT

If STD has passed and ACT OUT is still blank, the phase becomes DLY.

At this point the display should count up as elapsed delay time. The visual tone should become orange.

After ACT OUT is entered, countdown-style notification and Dynamic Island content for that sector stops.

4.4 After departure and before arrival

You may update:

- ACT OUT
- Plan FT
- In-flight rest
- Watch flight-time / rest planner fields

For multi crew or double crew, use In-Flight Rest Planner when a planned rest schedule is required.

4.5 After arrival

Enter:

- ACT IN

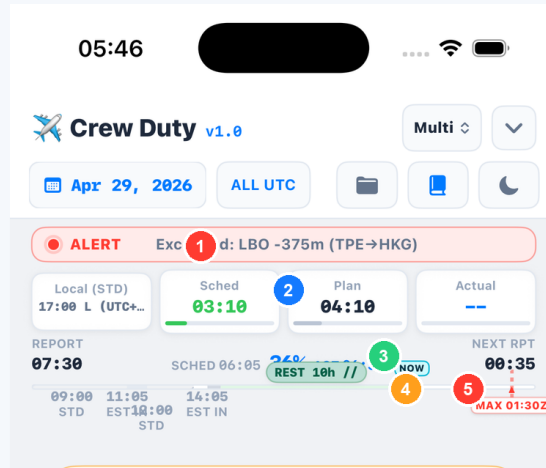
Then CDT updates:

- Actual flight / block result
- Turnaround
- Next Duty / rest planner
- Final duty outcome
- Rolling FT

5 Reading the main screen

Main screen: read the HUD first

The HUD summarizes legality and timing before you inspect sector cards.



1

Alert banner

Review first. Red means immediate attention such as LBO exceeded or impossible.

2

Schedule / Plan / Actual

Expected timing is separated from actual times entered during operation.

3

Current phase

Report, rest, delay, or active operation appears in the center timeline.

4

NOW marker

Shows where current time sits against scheduled and legal boundaries.

5

Limit marker

MAX labels show the latest legal boundary from configured company rules.

Figure 3. HUD breakdown: phase, timeline, legal limits, and alert banner.

Previous Flight: 24-hour rolling FT

Use this when a previous sector still overlaps the rolling 24-hour window.

PREVIOUS FLIGHT (24H ROLLING) CLR

DATE	SECTOR
1 Apr 29	2 KHH-TPE
ACT IN	FT
0500	3 0130
24H OVERLAP	4 --

Previous sector date
The previous ACT IN date anchors the rolling-window calculation.

Previous sector
Enter the sector so the source of previous FT is traceable.

Previous FT
Duration field. This is not clock time.

24h overlap
CDT calculates how much previous FT still overlaps current duty.

Figure 4. Previous Flight section feeds the rolling 24-hour Flight Time (FT) calculation.

block-OUT station card

Use this card for planned departure, actual off-block, taxi, and LBO push time.

TPE HOTEL

DEPARTURE (OUT)

1 0900 Z 2 ACT OUT 3 TX 15
= 1700L

LAST LEGAL PUSH (Z)
4 15:30

REPORT (Z)	MAX FDT	MAX FT	LANDINGS	NEXT RPT
07:30 (15:30L)	18h	16h	2	08:35L +1 (00:35Z)
AUTO STD-90	Limit	Limit	Max: 6	Rest: 10h

1 STD
Scheduled Time of Departure. CDT also shows local conversion when needed.

2 ACT OUT
Actual Out / actual block-OUT time. Countdown-style reminders stop after this is entered.

3 Taxi OUT
Default taxi-out minutes come from Settings. Change only when the sector differs.

4 Last legal push
LBO-related latest push time. If LBO is IMPOSS, review immediately.

Figure 5. block-OUT station card: Scheduled Time of Departure (STD), Actual Out (ACT OUT), taxi, and latest legal push.

Bottom status bar

This is the fast legality scan when the main card is scrolled.

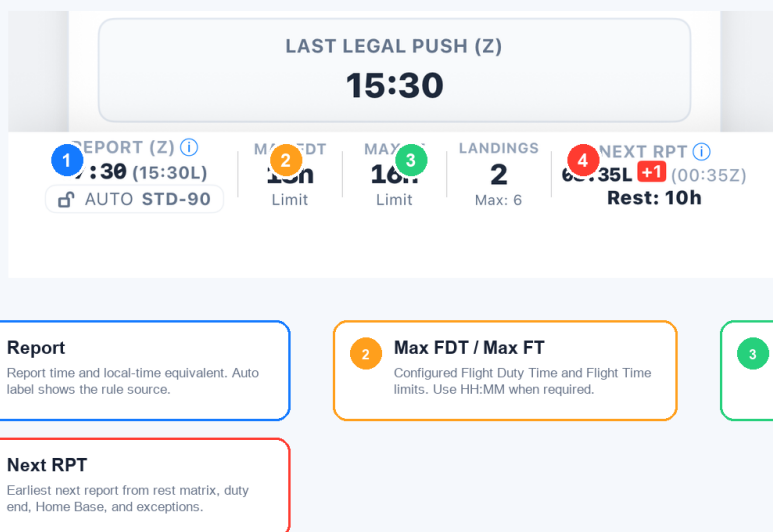


Figure 6. Bottom status bar for quick legality scan.

5.1 HUD

Read the HUD first. It summarizes:

- Current phase
- Countdown / elapsed time
- Max FDT
- Max FT in 24h
- LBO
- Next Duty / rest result
- Caution / Alert status

Color concept:

- Green: normal or safe.
- Blue: active operation / action phase.
- Orange: delay, caution, or close to a limit.
- Red: alert, exceedance, or impossible condition.

5.2 Station card

Station cards are used for station and time input:

- Station code, such as TPE
- STD
- STA
- ACT OUT
- ACT IN
- Taxi badge

Departure stations focus on STD / ACT OUT. Arrival stations focus on STA / ACT IN.

5.3 Flight leg card

The card between two stations shows:

- FLIGHT LEG or ACM (Pos)
- Sched
- Plan FT
- Act
- Rest planner shortcut

Plan FT is OFP sector flight time. Actual values update from ACT OUT and ACT IN.

5.4 CDT 1.1 selectable UI checks

Use these checks when changing the Main Screen style:

- Flight Card: RPT detail review and RPT LOCK are both available.
- Card+: compact status shows FT REM and FDT REM; RPT detail remains reachable.
- Dash Board: the semi-circle duty ring is visible; the RPT-side status uses Max FDT and Max FT.
- Ticket: Single, Multi, and Double are tappable crew controls.
- Flight Strip: status uses FT REM and FDT REM instead of next-report / next-duty labels.

Changing style must not change calculation output. Treat any mismatch between styles as a UI or data-flow defect, not a separate rule set.

6

LBO status

LBO status levels

LBO is not just text. Caution, alert, and impossible should change color and attention level.

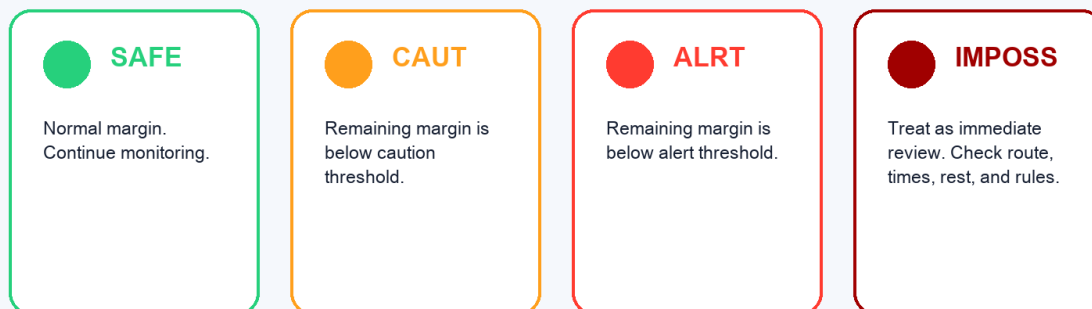


Figure 7. LBO status levels and required attention.

LBO is an important warning item calculated from settings, time, rest assumptions, and duty state.

Common statuses:

- Normal: sufficient remaining margin.
- CAUT: Remaining margin is below LBO Caution Threshold.
- ALRT: Remaining margin is below LBO Alert Threshold.
- IMPOSS: The current condition cannot satisfy the requirement.

If LBO shows **IMPOSS**, do not treat it as normal text. Recheck duty timing, rest, route, schedule, dispatch plan, and company rules before continuing.

7

Max FDT / FDP

Max FDT / FDP is the available duty limit. It can be affected by:

- Crew type: Single / Multi / Double
- Rest facility: C1 / C2 / C3
- Landing count
- Night operation
- Split duty
- Discretion
- ULR
- Company-specific settings

If your company uses a non-whole-hour limit such as 12 : 30, enter HH:MM. Do not approximate as 12h or 13h.

8

Max FT in 24h

Max FT in 24h is a rolling 24-hour flight-time limit.

CDT principles:

- Use gross FT.
- Do not deduct in-flight rest credit.
- ACM contribution depends on Settings.
- Single, Multi, and Double crew can have separate limits.
- C2 / C3 can share one non-C1 cap or use separate caps.

If the result is close to or over a limit, recheck:

- Whether Plan FT is OFP sector flight time.
- Whether ACT OUT and ACT IN are correct.
- Whether ACM settings match company rules.
- Whether the crew type is correct.

9

Next Duty Planner

Next Duty Planner: earliest legal report

Use the final ACT IN whenever available. CDT then applies rest, transport, and company exceptions.

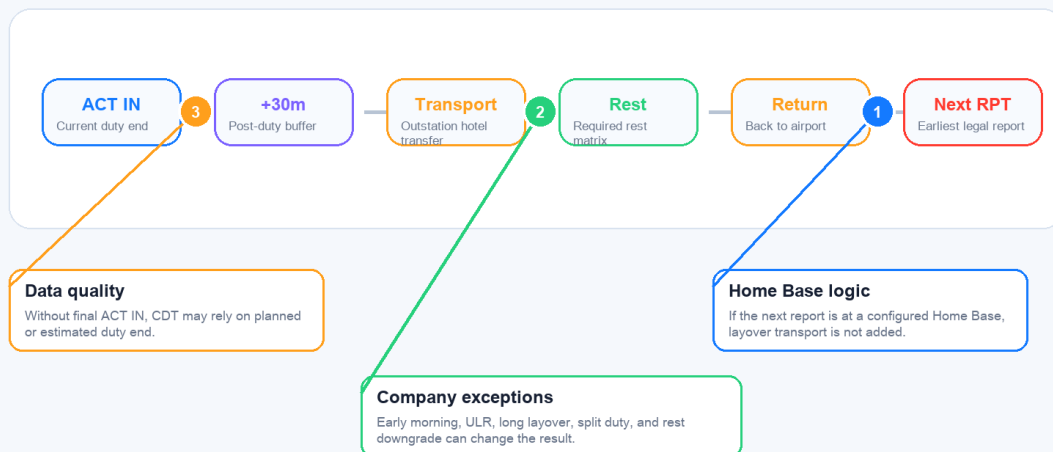


Figure 8. Next Duty Planner flow from current duty end to earliest legal report.

Next Duty Planner estimates the earliest legal report for the next duty.

Use it after the current duty has a reliable end time. The final ACT IN is the preferred source. If final ACT IN is blank, CDT may have to use plan or estimate values, which is less reliable.

It can use:

- Current duty end
- Home base / outstation status
- Rest matrix
- Early morning rules
- ULR / long layover
- Transport time
- Split duty
- Company rest rules

Typical calculation flow:

- 1 Current duty ends at ACT IN.
- 2 CDT applies post-duty buffer / debrief handling where configured.

- 3 If the next report is outstation, transport time can be added to and from the hotel.
- 4 Required rest is applied from the configured rest matrix and exceptions.
- 5 The result becomes the earliest legal report time for the next duty.

If the next duty reports at a configured Home Base, layover transport time is not applied. If the next duty code is a non-flight duty, confirm the report offset or manual override before relying on the result.

10

In-Flight Rest Planner

In-Flight Rest Planner

App-style layout: set block off, segment count, duration locks, and wake-up times.

In-Flight Rest Planner
TPE -> LAX • Total Rest: 04:15

Block Off / block-OUT: 0900

Segments: 3

Segment	Duration	Wake Up
S1	02:15Z	02:15Z
S2	04:10Z	04:10Z
S3	06:05Z	06:05Z

Unlock All & Evenly Distribute

1 Block Off / block-OUT
Use actual or planned off-block time as the rest-window anchor.

2 Segments
Minus and plus change how many rest periods the planner distributes.

3 Duration / lock
Tap a duration to type HHMM. Locked rows stay fixed while others rebalance.

4 Wake-up time
Planner shows UTC wake-up times for each

Figure 9. Rest Planner distributes rest segments and buffers; it does not reduce Maximum Flight Time (Max FT) in 24 hours.

Use In-Flight Rest Planner for multi crew or double crew duties that require planned in-flight rest.

You can configure:

- Rest segment count
- Block-off time
- Start time for each rest segment
- End time for each rest segment
- Buffers

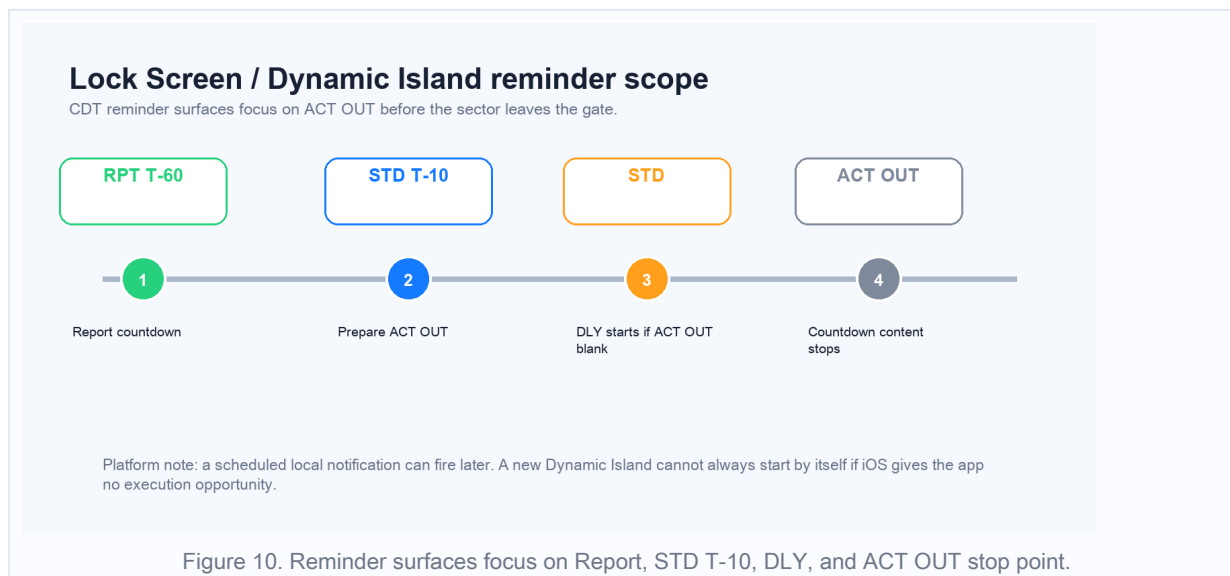
The planner redistributes rest based on the currently available window. If you change block-off time or one segment, other segments may be recalculated. Every UI style that opens the planner should expose block-off time editing because it changes the available rest window.

Important:

- Rest Planner is a rest distribution tool.
- It does not reduce Max FT in 24h.
- FT Start Buffer, FT End Buffer, STD Start Buffer, and STA End Buffer define protected non-rest time.

11

Lock Screen, Dynamic Island, and notifications



These surfaces are critical-window displays. They are not full flight-monitoring surfaces.

Displayed phases:

- 1 Report countdown.
- 2 After report and before STD.
- 3 After STD and before ACT OUT, showing DLY elapsed time.

Content should include:

- Route
- Phase
- Expected time
- UTC / local time context
- Countdown or elapsed delay
- Action button when needed

Stop condition:

- After ACT OUT is entered, that sector's countdown-style notification and Dynamic Island content stops.

Platform limits:

- Local notifications can be scheduled for future reminders.
- Dynamic Island / Live Activity cannot always create itself if the app has no execution opportunity.

- The most reliable practice is to open CDT within about 1 hour before report.

12

Apple Watch

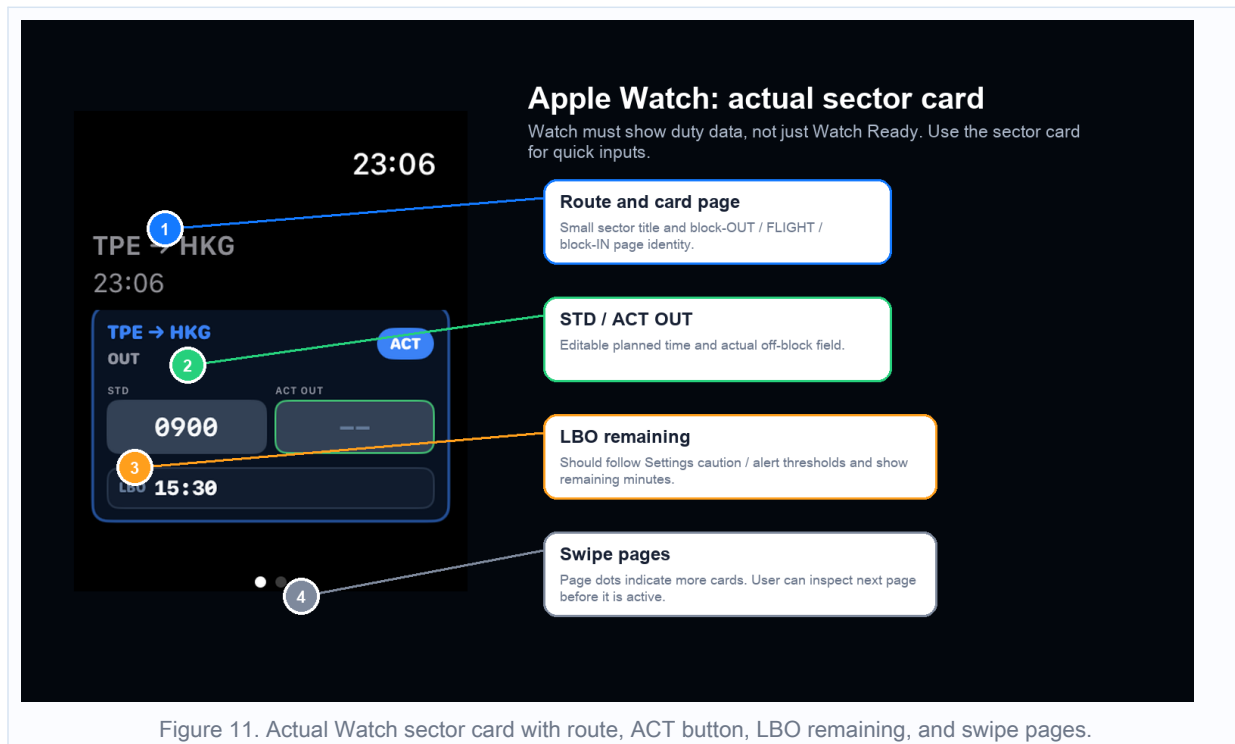


Figure 11. Actual Watch sector card with route, ACT button, LBO remaining, and swipe pages.

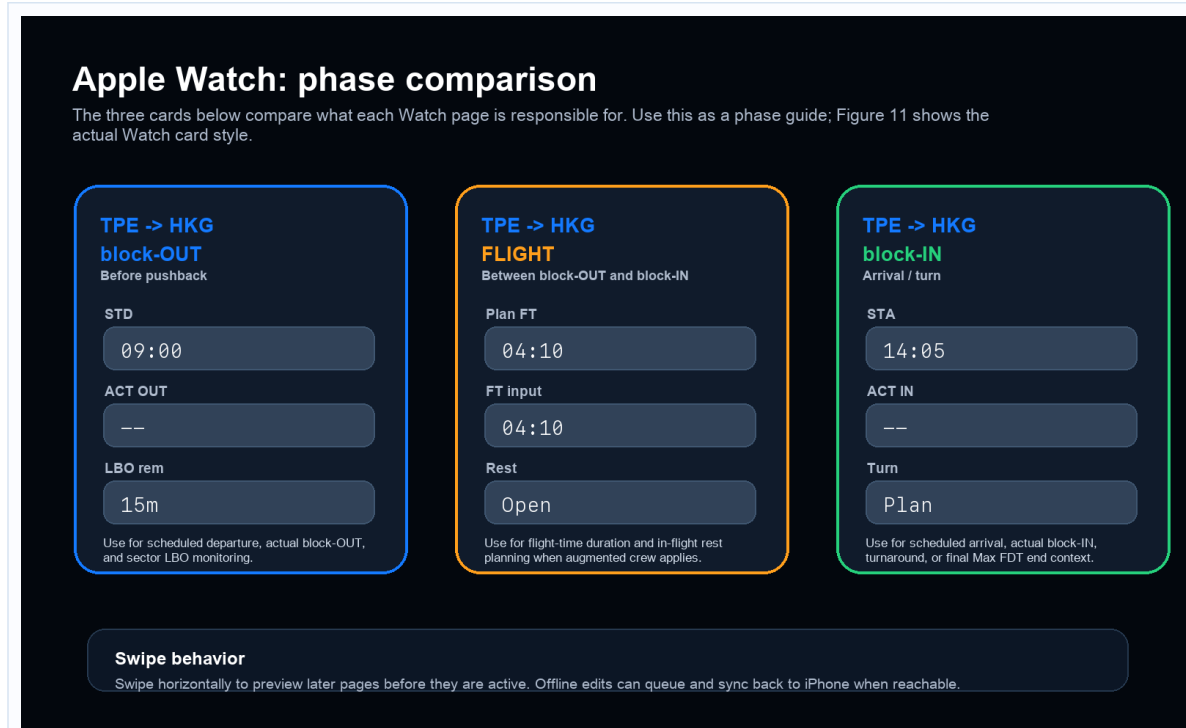


Figure 12. Apple Watch phase comparison for block-OUT, FLIGHT, and block-IN pages.

The Apple Watch app is a simplified input and viewing surface for the current iPhone duty.

12.1 Sync

Watch reads the current duty snapshot from iPhone. If Watch shows `Waiting for iPhone duty data`, confirm:

- CDT has been opened on iPhone.
- iPhone and Watch are paired.
- The Watch app is installed.
- iPhone CDT has a current route / duty loaded.

12.2 Watch sector cards

Watch uses swipeable sector cards. A sector can have:

- block-OUT page: route name, `STD`, `ACT OUT`, and that sector's LBO remaining.
- FLIGHT page: `Plan FT`, flight-time input, and the in-flight rest planner button when Multi Crew or Double Crew applies.
- block-IN page: route name, `STA`, `ACT IN`, and turn context. Intermediate sectors show `Turn (plan)` or `Turn (actual)` depending on available data; the final sector shows Max FDT end context.

You can swipe ahead to preview later sectors.

Color follows phase:

- Green before report.
- Blue after report and before `STD`.
- Orange after `STD` while `ACT OUT` is still blank.
- Completed or alert states follow app rules.

12.3 Entering time on Watch

Watch can enter:

- `STD`
- `STA`
- `ACT OUT`
- `ACT IN`
- Flight time / rest planner times

When current-time input is needed, an action button may appear in the relevant phase.

12.4 Offline input

Watch supports offline-capable edits. Offline edits are queued and sync when iPhone becomes reachable.

After sync, confirm on iPhone that the data updated correctly. If the route changed on iPhone while Watch was offline, refresh Watch duty data before relying on queued edits.

13 Route, Settings, and backup

CDT uses different storage concepts:

- Settings / Profile: Company rules, limits, and preferences.
- Route / Duty: A specific flight or duty scenario.

Recommended usage:

- Back up company rules with `Export Current Settings...`
- Use separate settings profiles for different operators, fleets, aircraft types, or bases.
- Do not mix route data into settings profiles.

This keeps company-rule updates separate from flight data.

14 Example workflows

14.1 Single sector

Scenario: TPE → HKG

- 1 Confirm Settings match company rules.
- 2 Build route: TPE , HKG.
- 3 Enter STD.
- 4 Enter STA.
- 5 Enter Plan FT from OFP sector flight time.
- 6 Monitor the report / STD action window.
- 7 Enter ACT OUT at off-block.
- 8 Enter ACT IN at on-block.
- 9 Review Max FDT, Max FT, LBO, and Next Duty.

14.2 Return duty

Scenario: TPE → HKG → TPE

- 1 Build route: TPE , HKG , TPE.
- 2 Enter STD, STA, and Plan FT for sector 1.
- 3 Enter STD, STA, and Plan FT for sector 2.
- 4 Check turnaround against Min Turnaround.
- 5 During operation, enter sector 1 ACT OUT / ACT IN.
- 6 Then enter sector 2 ACT OUT / ACT IN.
- 7 Review next rest / next duty after completion.

14.3 Multi crew / Double crew

- 1 Select the correct crew type.
- 2 Confirm Max FDP Limits, Max FT in 24h, and Aircraft Rest Facility.
- 3 Open In-Flight Rest Planner if in-flight rest is required.
- 4 Set rest segments.
- 5 Confirm the rest plan matches company rules.
- 6 Remember that rest planner does not reduce Max FT in 24h.

14.4 Watch ACT OUT

- 1 Load the duty on iPhone.
- 2 Open CDT on Apple Watch.
- 3 Swipe to the active block-OUT page.
- 4 Enter ACT OUT or use the action button.
- 5 Confirm sync on iPhone.

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Common mistakes

Entering block time as Plan FT

Incorrect. Plan FT should be OFP sector flight time, not block time.

Adding taxi time into Plan FT

Incorrect. Taxi OUT / Taxi IN is handled by Settings and taxi fields. Do not double-count taxi in Plan FT.

Reading legal results before Settings are configured

Incorrect. Max FDT, Max FT, Rest Matrix, LBO, Night Ops, ULR, and ACM are company-specific. Until Settings are configured, results are only a default-app demonstration.

Notification disappears after ACT OUT

This is by design. CDT's countdown-style Lock Screen and Dynamic Island reminder stops after ACT OUT.

Notification appears but Dynamic Island does not

This can be an iOS platform limitation. Local notifications can be scheduled, but Live Activity / Dynamic Island needs an app execution opportunity to reliably start or update. Open CDT within about 1 hour before report.

Watch shows Waiting for iPhone duty data

Open CDT on iPhone first, confirm a duty is loaded, then reopen Watch CDT.

LBO shows IMPOSS

This means the current condition cannot satisfy LBO. Check duty timing, rest, route, company rules, and dispatch plan.

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Pre-release / operational self-check

Before relying on CDT operationally, verify:

- Home Base is correct.
- Report rules are correct.
- Default Taxi OUT / Default Taxi IN are correct.
- Max FDP / FDT is correct.
- Max FT in 24h is correct and uses gross FT if required by your company.
- Rest Facility C1 / C2 / C3 is correct.
- Rest Matrix is correct.
- Night Ops / Early Morning rules are correct.
- Split Duty / Discretion rules are correct.
- ULR / Long Layover rules are correct.
- ACM / Positioning rules are correct.
- LBO caution / alert thresholds are correct.
- Cabin reference is understood as reference-only.
- Apple Watch can sync iPhone duty.
- Lock Screen / notification behavior has been tested.

If any item is uncertain, do not treat CDT output as a company legality conclusion.