Part 135 / 125 IFR Alternative Flight and Duty Scheme

EXAMPLE

# Preamble

This scheme is designed to form an integral part of a company’s Safety Management System (SMS). It is applicable only for operations where flight crew members remain acclimatised to their local NZ time zone. Operations outside this, require separate NZCAA regulatory approval.

**Note:** To remain acclimatised, flight crew members must operate within no more than +/- 2 time zones from NZ local time, or if operating outside +/- 2 time zones from NZ local time, spend no more than 36 hours in a time zone greater than +/- 2 time zones from NZ local time prior to commencing an off-duty period in their local NZ time zone.

This scheme as published is complete and scientifically acceptable when applied and followed in full. All flight and duty schemes are subject to final NZCAA regulatory approval. Operators should specify separately in their operations manual specific duties of the pilot-in-command during emergencies as required by Section 13A of the Civil Aviation Act 1990.

If an operator wishes to make amendments to this scheme as drafted, they will need to submit their scheme as amended to a recognised scientific expert for scientific review and endorsement prior to regulatory approval. If amendments are to be made, these must be shown using track changes to assist the scientific expert in identifying the changes. Justification of the changes would also be beneficial. This will reduce time and cost of further assessment.

**This preamble does not form part of the scheme and is for explanation of process to be followed by operators.**

# Alternative Flight and Duty Time (FDT) Scheme for Part 135 and 125 IFR operations within the New Zealand domestic FIR

1. **INTRODUCTION**

**1.1 Purpose and Scope**

The purpose of this scheme is to ensure [insert name of company] meets all the requirements of the Civil Aviation Act 1990 and the relevant Rules, as they apply to the regulation of flight times and the avoidance of fatigue in crew members. This scheme is limited to IFR operations conducted under CAR Part 135/125 and covers all flight operations from [insert name of company’s] bases conducted within the New Zealand Domestic Flight Information Region (NZFIR).

*[Operators should amend the above sentence as required to ensure the wording accurately reflects the scope of their Part 135 and/or 125 operations conducted under IFR within the New Zealand domestic FIR to which this scheme has application e.g., helicopter, fixed wing, single-pilot and/or multi-pilot operations etc.]*

**1.2 Aim**

The aim of this scheme is to ensure that fatigue arising during duty periods and duty periods are managed appropriately, and that the off-duty periods provided ensure crew members are adequately rested prior to the beginning of each duty period. Accordingly, roster construction will take account of the length of duty periods, time free from duty and cumulative duty periods in attempting to maintain a balanced workload amongst crew members.

**1.3 Applicability, Interpretation and Compliance**

The scheme applies to all duties carried out at the behest of the company. It is to be read and interpreted in accordance with the definitions provided in Section 18.

The scheme is applicable to crew members who are acclimatised to New Zealand local time and to operations conducted solely under IFR rules within the New Zealand domestic FIR. This scheme shall be complied with by crew members and management personnel responsible for scheme administration.

In this scheme wherever the words “shall”, “must”, or “will” are used the requirements are mandatory. The use of the words “should” or “may” indicates industry best practice that are recommendations that are strongly encouraged, but not mandatory.

 **1.4 Responsibilities**

1. This scheme [forms / will form] part of the [insert name of company’s] obligation to manage fatigue risk in accordance with the organisation’s SMS and the Health and Safety at Work Act 2015 (HSWA2015), and as such [falls / will fall] under the responsibility of the CEO.
2. This scheme will be administered by [insert position of CAA approved responsible Senior Person].The [insert position of responsible person] is responsible for managing the scheme, and ensuring the appropriate processes and systems are implemented to reduce the risk of fatigue (so far as is reasonably practicable), including:
* identifying, managing and mitigating fatigue hazards
* developing and maintaining appropriate rosters
* investigating and administering all fatigue-related reports submitted by crew members
* initial and recurrent fatigue education of crew members and maintaining records of fatigue education received
* maintaining the required records
1. The company will assign and maintain a record of each crew member’s designated home base.
2. The company will publish rosters sufficiently in advance so that operating crew know their planned work periods and time free from duty and can plan for adequate pre-duty rest. Crew members will normally be given at least [insert number of days]days’ notice of days off. The roster will be prepared in mutual agreement with affected crew members and issued to all crew members at least 7 days before the start of each roster period.
3. Responsibility for the management of fatigue is the shared responsibility of [insert name of company] and crew members. The company acknowledges its responsibilities specified in CAR 125.803 and/or 135.803 (b) and (c); in particular that a flight crew member must not be permitted or caused to perform an air operation if there is reason to believe that the flight crew member may be suffering from or considering the circumstances of the flight to be undertaken is likely to suffer from fatigue that may endanger the safety of the aircraft or its occupants. Flight crew responsibilities are specified in CAR 125.805 and/or 135.805. In particular flight crew must be aware of their responsibilities under CAR 125.805 and/or 135.805 (a) if they are suffering from, or, given the circumstances of the flight to be undertaken, likely to suffer from fatigue that may endanger the safety of the aircraft or its occupants. Flight crew shall not act as operating crew unless they are fit for duty. If they know, or suspect, that their physical or mental condition renders them unfit to operate they must declare this to the [insert position of responsible person] so that alternative arrangements can be made. Furthermore, they must not fly if they know that they are or are likely to be in breach of this scheme.
4. Additionally, crew members are responsible for:
* complying with the requirements of this scheme.
* taking advantage of sleep and rest opportunities provided to achieve required restorative sleep or rest, so they are sufficiently alert for subsequent flight duties.
* reporting fatigue-related occurrences that have led or could have led to a reduction in safety margins if some additional mitigating action had not been taken.
* notifying the [insert position of responsible person] of any personal situation that because of its nature, duration, effects or for any other reason, might impact on the crew member’s ability to meet the company’s fatigue risk management obligations. This could include notification of factors such as secondary employment, living a long distance from base, travelling a long distance to report for duty etc.
1. CAR 125.805 and/or 135.805 (b) requires that “a flight crew membershall not perform other hire or reward flight duties while employed, engaged, or contracted by an air operator when such duties in addition to such duties and flying in addition to that in air operations will exceed the flight and duty time limitations prescribed in the scheme” approved for [insert name of company]. Pilots performing hire and reward operations for other operators must provide all relevant details of such other hire and reward duties and flying, duty periods, rostered days off and cumulative flight and duty time to the [insert position of responsible person] to ensure rosters are built in compliance with the requirements of this scheme.
2. **OFF-DUTY PERIODS AND DAYS OFF**
	1. A crew member will not be assigned or commence a duty period or standby duty unless the crew member has been provided the opportunity of at least 8 consecutive hours’ sleep uninterrupted by any requirement of the company.
	2. A crew member cannot be assigned or report for a duty period or standby until the crew member receives an off-duty period as specified below. Except as provided in 2.3, 2.4 and 2.5 below, a crew member’s off-duty period will be at least 10 hours (the minimum off-duty period). When a crew member is rostered to report for a duty at home base prior to 0600 local time, the off-duty period immediately preceding such duty shall be increased to 12 hours.
	3. At home base when the duty period is 11 hours or longer the minimum off-duty period post duty shall be at least 12 hours.
	4. If pilot-in-command’s discretion is exercised, then the off-duty period following that duty period must be increased in accordance with the provisions of Section 10.3.
	5. 36 hours free of duty (including two local nights) shall be provided at least once in any 7 consecutive day period.
3. **COMMUNICATIONS**
	1. An operator shall develop a communications policy, which considers the following:
		1. Contact with crew members between the hours of 2200 and 0600 hours should be avoided.
		2. If a crew member’s reporting time is to be delayed, contact with crew members to inform them of the delay shall be conducted in a manner to minimise disturbance to the crew member’s sleep.
		3. When the company informs the crew member of a delay of 10 hours or more in reporting time and the crew member is not further disturbed by the company, the delay counts as an off-duty period.
		4. The off-duty period is reset if a crew member is contacted in a manner that disrupts the opportunity for 8 hours uninterrupted sleep.
4. **DUTY PERIOD AND FLIGHT TIME LIMITATIONS**
	1. The standard reporting time prior to flight is [insert number of minutes] minutes. Pre-flight duties are part of the duty period; 30 minutes duty must be allowed for post-flight activities, which are also included as part of the duty period.
	2. A crew member must not be assigned a duty period longer than the number of hours specified in Table 1 below (the duty period limit), as determined by the start time of the duty period.
	3. A flight crew member shall not be assigned, nor shall a flight crew member accept such assignment, if the member’s total flight time will, as a result, exceed the applicable maximum flight time within any duty period.
	4. When a flight crew member flies in a simulator, or on a check or training flight, or as an instructor, flight and duty time is included in that duty period.

Table 1: Maximum Duty Period

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Report for duty (local time)** | **0430 – 0559** | **0600 – 0659** | **0700 – 0959** | **1000- 1759** | **1800 – 2259** | **2300 - 0459** |
| **Maximum length of duty period (hours)** | 10 | 11 | 12 | 11 | 9 | 8 |

**Note 1: Maximum length of duty period**

Refer Section 10 for specific requirements applicable to use of discretion in unforeseen circumstances.

**Note 2**: **Single-pilot**

For single-pilot operations the maximum flight time within a single duty period is 6 hours.

**Note 3: Two-pilot**

For two-pilot operations the maximum flight time within a single duty period is 8 hours, however this may be extended to 10 hours of flight time, where three or fewer sectors are flown.

1. **LIMITS ON DISRUPTIVE DUTY PERIODS**
	1. No more than two consecutive late-night operations are permitted. Any duty period rostered during late-night operations must be preceded by an off-duty period of at least 12 hours immediately prior to reporting for such an assigned duty.
	2. Any rostered late-night operations must also be followed by a minimum 12 hour off-duty period.
2. **EXTENSION OF DUTY BY USE OF SPLIT DUTY**
	1. A flight crew member’s duty period may exceed the maximum duty period set out in Section 4.4 by 50% of the duration of the break provided to the crew member. The break must be taken in suitable accommodation; and
3. The assigned split duty period is notified in advance (at a minimum prior to the off-duty period immediately preceding the split duty assignment); and
4. The break in suitable accommodation is at least 3 hours in duration and includes the period 1400-1500 local time; and
5. The second half of the split duty does not exceed 5 hours in duration; and
6. The duty period as extended by split duty including any discretionary extension of duty period exercised under Section 10 is limited to a maximum of 14 hours.
7. **MEAL BREAK**
	1. Any duty period exceeding 4 hours, crew members shall have a rostered meal period on the ground of not less than 30 minutes. Provision shall be made for such a meal period within the first 5 hours of a duty period and thereafter at intervals of not more than 4 hours from the completion of the previous meal period. A meal break required under this provision may be included during the period of the break in suitable accommodation when split duty periods are assigned in accordance with the provisions of Section 6.
8. **DELAYED REPORTING TIME**
	1. A crew member’s reporting time may be delayed in the event of unforeseen circumstances.
	2. When a crew member is notified of a delayed reporting time in accordance with company specified procedures, the duty period is calculated as follows:
		1. The maximum duty period is calculated based on the more limiting of the original or the delayed reporting time and the duty period starts counting at the delayed reporting time.
		2. If more than one delay is notified, then the duty period starts counting 1 hour after the second notification or at the original delayed reporting time, whichever is earlier.
9. **CANCELLATIONS**
	1. If a crew member is notified by the company that a flight will not occur (cancellation), then the company may reschedule the crew member to work within the rostered duty period.
	2. Whether or not the crew member is rescheduled to work within the rostered duty period, the subsequent off-duty period must remain as originally scheduled.
10. **DISCRETION IN UNFORESEEN CIRCUMSTANCES (PILOT-IN-COMMAND)**
11. **Extension of duty period**

Discretionary extension of a duty period beyond the applicable maximum values specified in Table 1 of Section 4 is only permitted in unforeseen operational circumstances. Before exercising this discretion, the pilot-in-command shall be satisfied that all crew members required to operate the aircraft consider themselves to be fit to undertake the extended duty period. The following limits apply:

* + 1. The duty period specified in Table 1 of Section 4 may only be extended by a maximum of 1 hour, and shall be calculated according to what happens, not what was planned to happen.
		2. An extension of duty period is not permissible if it causes a crew member to exceed the cumulative flight time limits in Section 14 or the cumulative duty time limits in Section 15.
		3. In all cases where the pilot-in-command intends to extend a duty period, he/she shall whenever possible confirm this use of their discretion with the [insert title / position of appropriate responsible person].

*Under Section 13 of the Civil Aviation Act 1990, the pilot-in-command of an aircraft is responsible for the safe operation of the aircraft in flight, the safety and well-being of all passengers and crew, and therefore has discretion not to permit an extension to occur even though allowed under Section 10.1.1*

* 1. Reduction of duty period and/or increase in off-duty period. In case of unforeseen circumstances that could lead to severe fatigue, the pilot-in-command shall reduce the actual duty period and/or increase the off-duty period in order to eliminate any detrimental effect on flight safety.
	2. Whenever a pilot-in-command extends a duty period under the provisions of Section 10.1 the subsequent off-duty period must be increased by the amount of the extension. All discretionary extensions shall be reported to the [insert title / position of appropriate responsible person] and a record maintained of all extended duty periods.
1. **STANDBY**
	1. All standby shall be rostered and the start and end time of standby shall be defined. Changes to rostered periods of standby during the active roster should be notified at a minimum prior to the commencement of the off-duty period immediately preceding the rostered change, to provide the opportunity to obtain adequate sleep.
	2. Standby must be preceded by an off-duty period in accordance with the requirements in Section 2. The limits in Section 2.1 and 2.2 apply.
	3. **Airport standby**
		1. The maximum duration of airport standby and duty period is determined by the reporting time at the airport according to the applicable limits in Table 1 of Section 4.
		2. [insert name of company] shall provide accommodation for crew members on airport standby. The accommodation shall be suitable for rest i.e., a quiet and comfortable place not open to the public with the ability to control light and temperature, equipped with adequate furniture that provides a crew member with the opportunity to sleep, with enough capacity to accommodate all crew members present at the same time, and with access to food and drink.
		3. The time spent on airport standby counts in full for cumulative duty limits in Section 15.
	4. **Standby from home or place other than as defined above**
		1. The maximum standby period shall not exceed 12 hours.
		2. At the end of a standby period the minimum off-duty period in Section 2.3 applies.
		3. The total time a crew member may spend on standby and duty period in event of callout, is limited to the duty period specified in Table 1 of Section 4, plus 4 hours, or 16 hours whichever is less.
2. **POSITIONING**
	1. When a crew member is transported by company transport and they are not fulfilling a flight crew member role:
		1. Before the beginning of a duty period, time involved in transporting the flight crew member to the normal place of work/home base shall not be regarded as part of any duty period or any rest period.
		2. At the beginning of a duty period, time involved in transporting the flight crew member to a place of work other than the normal for that base shall be considered duty time for the purpose of these limitations.
		3. At the completion of a duty period, time involved in transporting a flight crew member to their normal place of work/home base or place of rest, whichever is applicable, shall not be regarded as part of any duty period or of any rest period.
3. **ADDITIONAL LIMITS ON HELICOPTER FLYING**
	1. **Survival Suits**
		1. The wearing of survival suits can prove an irritant and be uncomfortable. Therefore:
4. A flight crew member should not participate in moving freight or baggage, or any other activity requiring excessive physical effort. Their role should be supervisory; and
5. Schedules which involve continuous flying in excess of four and a half (4½) hours shall include provisions for a break free of all duty of at least 30 minutes, not including a total of 30 minutes for immediate post and pre-flight duties. The break shall be scheduled prior to exceeding a total of 6 hours flying.
6. **LIMITS ON CUMULATIVE FLIGHT TIME**
	1. A flight crew member shall not be assigned, and a flight crew member shall not accept such assignment, if the members total flight time, will as a result, exceed:
7. 100 hours in any consecutive 28 days;
8. 300 hours in any consecutive 90 days;
9. 1,000 hours in any consecutive 365 days or 12 consecutive month period (state which applies).
10. **CUMULATIVE DUTY TIME: CALCULATION AND LIMITS**
	1. Duty hours shall be added to cumulative totals in accordance with the following:

To count in full:

1. Duty periods and flight duty periods, plus subsequent post-flight duties.

1. The time spent on positioning in accordance with Section 12.
	1. Cumulative hours shall not exceed the limits in Table 2.

Table 2: Crew member Cumulative Limits

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **7 days** | **14 days** | **28 days** | **365 days** |
| **Maximum Duty** | 60 hours | 100 hours | 190 hours | Flight hours apply |

1. **RECORDS TO BE MAINTAINED**
	1. Records for the duty and off-duty periods of all crew members shall include:
2. The beginning, end and duration of each duty period (including standby duty when applicable);
3. Dates of days off; and
4. Cumulative duty time totals for each period.
	1. For each flight crew member, records shall be maintained for daily and periodic flight time totals. A crew member’s total flight time includes ALL flight time conducted for hire and reward (and private flying) accumulated in New Zealand or elsewhere.
	2. A record of crew member fatigue management training will be maintained.
	3. Records required under Sections 16.1 and 16.2 are to be retained for a minimum period of 24 months from the date on which the duty or flight took place.
	4. [Operators are to specify in their scheme how and where these records are kept].
5. **EDUCATION AND TRAINING**
	1. Education and training on the effects of fatigue and how it can be managed (to include sleep, the circadian biological clock, the consequences of sleep loss and recovery, the influence of workload and the way these factors interact with operational demands) are essential to understanding and managing fatigue risk inherent in shift work.
	2. To ensure crew members are knowledgeable regarding the effects of fatigue and how it can be mitigated and managed, all crew members will complete initial and biennial fatigue management training. Topics will include as appropriate: crew member responsibilities; causes and consequences of fatigue in the operation(s) in which they work; reporting fatigue hazards; how to identify fatigue in themselves and others; personal strategies that they can use to improve their sleep at home and to minimize their own fatigue risk, and that of others, while they are on duty; basic information on sleep disorders and their treatment, where to seek help if needed, and any requirements relating to fitness to fly.

[Operators to specify who is responsible for the oversight of such training, how the training will be delivered (e.g., classroom / computer-based training / outsourced) and the qualifications or specific training provided to those delivering the training]

[Operators to specify who other than flight crew in the organisation they may be required to complete fatigue training e.g., rosterer(s) and any other personnel involved in the management of fatigue]

1. **DEFINITIONS**

***Note:*** *These definitions have been designed to assist the development of FDT schemes but must be read alongside the Civil Aviation Rule Part 1 definitions which take primacy.*

**Aircraft** means any machine that can derive support in the atmosphere from the reactions of the air otherwise than by the reactions of the air against the surface of the earth.

**Airport standby** means standby when a flight crew member is required by the operator to be at a designated location, usually at an aerodrome.

**Break** means a period of time on the ground, shorter than a rest period, when the flight crew is free of all duties.

**Crew member** means a person assigned by an operator to duty on an aircraft during a duty period.

**Cumulative duty**means the progressive sum of duty periods.

**Cumulative flight time**means the progressive sum of flight time, excluding flight time accrued during recreational private operations.

**Days off** means periods available for leisure and relaxation free from all duties. A single day off shall include two local nights. An off-duty period may be included as part of a day off.

**Duty** means any task that a crew member performs as required by the operator, including but not limited to duty period, flight duty, pre- and post-flight duties, administrative work, training, positioning, aircraft positioning on the ground, aircraft loading, and aircraft servicing.

**Duty period** means any continuous period throughout which a flight crew member is required by an operator to be on duty or available for duty, whether on the ground or in the air.

*Where a flight crew member is required by an operator to be on duty or available for duty for two or more periods separated by an interval of less than 10 hours, the periods shall be deemed continuous, starting when the first of the periods begins and finishing when the last period ends. See also Split Duty.*

**Fatigue** means a physiological state of reduced mental or physical performance capability resulting from sleep loss, extended wakefulness, circadian phase, and/or workload (mental and/or physical activity) that can impair a person’s alertness and ability to perform safety-related operational duties.

**Fit for duty** means in respect of a person means that their ability to act as a crew member of an aircraft is not impaired by fatigue the consumption of alcohol or drugs or any mental or physical condition.

**Flight crew member** means a crew member assigned by an operator for duty in an aircraft during flight time as a pilot.

**Flight time** means the total time from the moment an aircraft first moves for the purpose of flight until the moment it comes to rest at the end of the flight including all associated push back, taxiing and subsequent holding time.

**Flight time – helicopters (1)** The total time from the moment a helicopter’s rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped OR

**Flight time – helicopters (2)** The total time from the moment a helicopter’s landing gear breaks contact with the ground until the final landing for that flight segment.

***Note: Helicopter operators may choose one of the definitions above as is applicable to their operations.***

**Home base** means the location, assigned by the operator to the crew member, from where the crew member normally starts and ends a duty period or series of duty periods and where, under normal circumstances, the operator is not responsible for the accommodation of the crew member concerned.

**Late-night operation** means an operation where a duty period includes time between the hours of 2300 and 0500 local time.

**Local night** means a period of 8 hours falling between 2200 hours and 0600 hours local time.

**Off-duty period** means a period of time during which a crew member is free of all duties and standby associated with his or her employment.

**Pilot-in-command** In relation to any aircraft, means the pilot responsible for the operation and safety of the aircraft.

**Positioning** means the practice of transferring crew from place to place as passengers in surface or air transport at the behest of the company.

**Reporting time** meansthe time at which a crew member is required by the company to report for any duty.

**Roster** means a list of planned shifts or work periods within a defined period of time.

**Safety Management System (SMS)**means a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies, and procedures.

**Sector** means the segment of a duty period between an aircraft first moving for the purpose of taking off until it comes to rest after landing on the designated parking position.

**Sleep opportunity**means a period of time during an off-duty period when a crew member:

* is not meeting the reasonable requirements of bodily functioning such as eating, drinking, toileting, washing and dressing; and
* has access to suitable accommodation without, under normal circumstances, being interrupted by any requirement of the operator

**Split-duty** means a duty period, which consists of two duties separated by a break on the ground during which the crew member is relieved of all duty but is of a lesser period than the minimum required off-duty period.

**Standby duty** means a period during which a company places restraint on a crew member who would otherwise be off-duty. However, it shall not include any time during which the crew member is contactable for the purpose of giving notification of a duty which is due to start 10 hours or more ahead.

**Suitable accommodation** means a well-equipped sleeping facility with a bed, which is subject to minimum noise, is well ventilated, in which it is possible to easily control the levels of light and temperature.

*A person’s home or residence is considered to meet the requirements of suitable accommodation.*

**Unforeseen operational circumstance** meansan unplanned event that becomes evident after the commencement of the duty period such as unforecast weather, equipment malfunction, or air traffic delay which may result in necessary on-the-day operational adjustments. Unforeseen operational circumstances do not include client demands or requests.



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