

29NOV2013

'FIRST LINE MAINTENANCE AND DISPATCHING' CASEMENT AIRBASE

Introduction

- 1. This document will provide a background brief on the Air Corps and the operation of Casement Airbase (AB) in order to provide the information necessary for students to develop a serious game to simulate the management of the ground manoeuvre 'ramp' area at Casement AB. The document will provide a summary and description of the following:
 - a. Airbase Location & Data.
 - b. Air Corps Organisation and Structure.
 - c. Air Corps Units; Roles, Responsibilities and Capabilities.
 - d. Ramp Organisation & Flight Dispatching Regime.
 - e. S Game Task.
- 2. Further details are provided in the following Annexes, which provide a detailed description of the management of the 'ramp' for each of the operating Units at Casement AB.
 - a. Annex A Description of the composition, roles and responsibilities of No1 Operations (Fixed Wing) Wing Ramp Crew.
 - b. Annex B Description of the composition, roles and responsibilities of No3 Operations (Helicopter) Wing Ramp Crew.
 - c. Annex C Description of the composition, roles and responsibilities of Air Corps (Flying Training) College Ramp Crew.

Airbase Location

3. Casement Air Base is the Headquarters for the Air Corps and is a 24/7 operational airport. Located South West of Dublin City, the Airbase is located adjacent to the N7 main road route to the South and South West of Ireland. The Airbase is the used for military and other government purposes and is the property of the Irish Department of Defence.

Airbase Data

- 4. The technical details of the Airbase are as follows:
 - a. Location. 53°18′06"N 006°27′04".
 - b. Elevation. 319ft / 97m.
 - c. Runways.
 - (1) 05/23: 1,463m Asphalt.
 - (2) 11/29: 1,829m Asphalt.







Figure 1 - Casement Airbase

Air Corp Organisation and Structure

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- 5. The Airbase accommodates three (3) operational units and three (3) support units and each unit reports to Air Corps Headquarters, which in turn reports to Defence Forces headquarters. The operational units, No1 Operations Wing, No3 Operations Wing and Air Corps College conduct fixed-wing, helicopter and training air operations respectively. Support units No4 Support Wing, No5 Support Wing and Communications units support operations by conducting engineering, administrative and communications tasks. Each unit has sub-units, normally referred to as Squadrons, with specific tasks, roles and responsibilities, as illustrated in Figure 2.
- 6. The focus for the S Game should be on the Operational Units, who have each possess the human and physical resources to operate aircraft. The 'Ramp' crew for each of the operating units is drawn from its engineering section and is manned by qualified aircraft mechanics and inspectors.



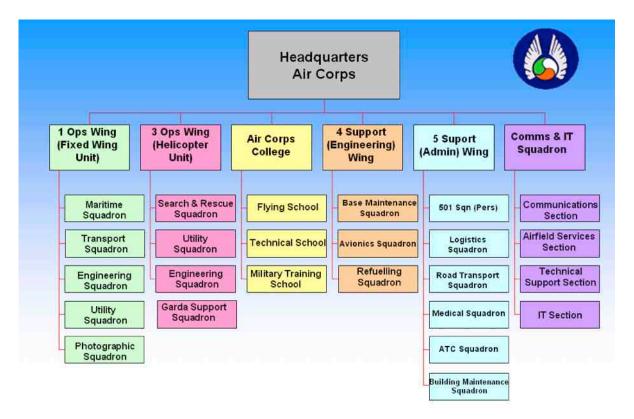


Figure 2 - Air Corps Table of Organisation

Air Corps Units; Roles, Responsibilities and Capabilities

- 7. <u>No1 Operations Wing.</u> This is the main fixed wing operational unit, which conducts air operations in support of the Irish Defence Forces and the Irish State. No1 Ops wing has the following Squadrons.
 - a. <u>101 (Maritime Surveillance) Squadron.</u> Operating Airbus Military CN235 Aircraft. This Squadron's primary responsibility is to provide a surveillance capability over Ireland's Exclusive Economic Zone (maritime territory), in conjunction with the Irish Navy. The aircraft conduct daily patrols and relay data gathered with their sensor suite to Naval vessels, who can then intercept and interdict shipping as required. In additional to Maritime tasks, these aircraft fulfil a utility role and can be configured for air ambulance, cargo transfer, parachuting and other tasks in support of the Irish Defence Forces and Irish Government agencies.



Figure 3 - CN235 Maritime Patrol Aircraft





b. <u>102 (Training and Transport) Squadron.</u> Operating Gulfstream GIV and LR45 aircraft. This Squadron provides a transport service for the Irish government with long range jet aircraft. The aircraft are equipped for a variety of utility missions, including Ministerial/Government Air Transport (MATS), air ambulance, non-combatant evacuation and strategic medical evacuation.



Figure 4 - GIV, LR45 and SKA200 aircraft

- c. <u>103 (Fixed-Wing) Maintenance.</u> Provide technical support for fixed wing aircraft. This squadron operates the hangar and ramp/apron area and conducts first line maintenance on all No1 Operations Wing Aircraft.
- d. <u>104 (Army Co-operation) Squadron.</u> Operating Reims FR172 aircraft for surveillance operations, these aircraft are used primarily for communications relay and surveillance during operations.



Figure 5 - FR172 Surveillance aircraft

- e. <u>105 (Photographic) Squadron.</u> This squadron provides photographic support for aerial photographic surveillance.
- 8. <u>No3 Operations Wing.</u> This is the rotary wing (Helicopter) operational unit which operates one tactical helicopter squadron, one training squadron and one Garda (Police) support squadron.
 - a. <u>301 (Tactical Helicopter) Squadron.</u> This squadron operates AW139 multi role medium helicopters. The aircraft provide tactical support for the Irish Defence Forces for security and military air mobility operations. This Squadron also provides an emergency medical service (Air Ambulance) for the Irish Health Service and various other tasks in support of the Irish State and Government Agencies.







Figure 6 - AW139 Helicopter

b. <u>302 (Utility Helicopter) Squadron.</u> This Squadron is equipped with EC135 helicopters which are utilised for helicopter conversion training, reconnaissance, military air mobility, casualty evacuation and emergency operations.



Figure 7 - EC135 Helicopter

- c. <u>303 (Rotary-Wing) Maintenance.</u> Provide technical support for rotary wing aircraft. This squadron operates the hangar and ramp/apron area and conducts first line maintenance on all helicopters.
- d. <u>304 (Garda Support) Squadron.</u> Operating Garda (Police) EC135 helicopters and Britten-Norman Defender aircraft. All Garda aircraft are operated by the military and the Defender aircraft is also maintained and handled on the ramp by the Air Corps. The Helicopters are maintained by a private contractor and handled on the ramp by Garda personnel.



Figure 8 - Garda EC135 Helicopter





9. <u>Air Corps College.</u> This is a training unit which operates a fleet of PC9 training aircraft. These aircraft are utilised for pilot ab initio and advanced training. These aircraft are also armed for security operations.



Figure 9 - Pilatus PC9M aircraft

Ramp Organisation & Flight Dispatching Regime

10. The Airbase has 24/7 air traffic control and support capability, including 'ramp' support. The 'ramp' is the area where aircraft manoeuvre before departure and after arrival. Aircraft are fuelled and loaded while on the ramp and limited first line maintenance is conducted on the ramp. The organisation of the 'ramp' area in Casement AB is as illustrated in Figure 10 with the aircraft parking areas located adjacent to their Unit's respective hangars.



Figure 10 - Casement Airbase Ramp/Apron Area





- 11. The 'ramp' crew for each unit are responsible for the first line air-side maintenance and ground handling of aircraft in the area illustrated. Each ramp crew is operated on a roster basis 24/7. The 'ramp' crew, in summary, perform the following tasks.
 - a. Daily Maintenance (each aircraft must complete a daily inspection within a 24hr period).
 - b. Defect rectification & component replacement.
 - c. Ground handling aircraft (towing aircraft from hangars after daily maintenance and towing back to hangars after last flight of the day).
 - d. Supervising aircraft fuelling.
 - e. Supervising aircraft start-ups.
 - f. Marshalling arriving aircraft to parking spaces on the 'ramp'.
 - g. Supervising aircraft loading and the transfer of passengers.
- 12. Each unit operate a ramp maintenance crew in isolation, with the specific skill sets and human resources required to fulfil their mission and tasks for the aircraft and nature of operation in their unit. For example; personnel from No1 Ops Wing are qualified for maintenance on their fixed-wing aircraft but not on helicopters.
- 13. The tasks accomplished by a ramp crew depend on the planned operations for their duty period. The nature of operations are not always predictable and include handling requirement for foreign aircraft. The ramp crew must be capable of meeting these demands in the most efficient manner.
- 14. The 24/7 operation of a ramp crew consumes a significant portion of the human resources assigned for maintenance and those assigned to the ramp crews are not thereafter available for day-to-day maintenance tasks.
- 15. Full details of the roles, responsibilities and tasks are provided in Annexes A, B and C for No1 Ops Wing, No3 Ops Wing and the Air Corps College respectively.

S-Game Task

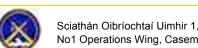
- 16. It is proposed that a game should be formulated to simulate the management of the 'ramp' area. The game should be capable of simulating various operational scenarios for aircraft arrivals and departures. The simulation should highlight possible resource choke points for typical scenarios. The game should be capable of adjusting to resource variations (addition or fewer personnel, for example) in order to ascertain the benefit, utility and safety implications of variations of ramp management.
- 17. The game participants will have access to the air base for the purpose of briefing and familiarity and will also have access to personnel who perform ramp duties from the various units concerned. While the Annexes provide a summary of the tasks and work routine accomplished by a ramp crew, participates will be able to view the ramp at first hand during their visit to Casement Airbase. Any questions can be answers and clarified at that time. During their visit participants will receive and overview briefing and will then visit each of the operating units and will be afforded the opportunity to clarify any issues during a questions and answers session with 'ramp' managers.





Annexes.

- A. Briefing document on the duties and responsibilities of No1 Operations Wing ramp crew.
- B. Briefing document on the duties and responsibilities of No3 Operations Wing ramp crew.
- C. Briefing document on the duties and responsibilities of Air Corps College ramp crew.





Annex A Number 1 Operations Wing Ramp Crew

Contents

Overvie	W		A-2
Aircraft	Operational Overview		A-2
	GIV	A-2	
	Learjet	A-3	
	CASA	A-4	
	Defender	A-5	
	Cessna	A-6	
Ramp C	rews		A-7
	Day Ramp Crew	A-7	
	Night Ramp Crew	A-8	
	Weekend Ramp Crew	A-9	
Appendi	ix 1		
Ту	pical Task/Dispatch Schedule for Day N	light Crews	A-10
Appendi	x 2		
	bles of Time and Resources used per T Each Aircraft	¯ask	A-11
Appendi	ix 3		
Dia	agram of No. 1 Ops Wing Ramp Area o	f Operations	A-16
Appendi	x 4		
Dia	agram of No. 5 Hangar Aircraft Parking		A-17

Overview - Number 1 Operations Wing Ramp Crew

Number One Operations Wing is the largest fixed-wing unit in the Irish Air Corps, based in Casement Aerodrome, Baldonnel.

The unit is based in number 5 hangar, from where it operates ten aircraft of five different types as follows:

1.	Gulfstream GIV	(role: ministerial transport, long range air
		ambulance)
2.	Learjet LR45	(ministerial transport, air ambulance)
3.	2 × Airbus Military -	(maritime patrol, air ambulance, troop
	- CASA CN235	transport, parachute operations)
4.	BN2T-4S Defender	(Garda/Police Air Support)
5.	5 × Cessna FR172	(prisoner or cash escort top cover, inland
		fishery protection, nature survey, target
		drogue towing)

With the exception of the defender, operations involving these aircraft are dispatched from, and return to, the ramp area immediately outside number 5 hangar, or the VIP ramp to the north-east of hangar five's ramp. See Appendix 3.

Aircraft Operational Overview

GIV

The GIV's main tasking is ministerial air transport (MATS). These generally can depart anytime from 0600 to 2300, and can return at any time of the day or night. All ministerial flights board at the VIP ramp, unless this area is occupied by a visiting aircraft, in which case the GIV is parked on the ramp outside bay three

of hangar five. The GIV must be positioned on the VIP ramp one hour before departure. Clearance must be obtained from the control tower before maneuvering any aircraft from hangar five onto the VIP ramp, since this will involve an incursion onto taxiway B (Bravo), which may be in use by aircraft accessing other areas of the ramp. Refuelling of the aircraft is generally not carried out more than one or at most two hours before dispatch. This is to allow for late variations in required fuel load, which may be greater or less than originally planned for. On return, the aircraft waste and galley systems are serviced. The ramp crew assists with baggage loading and unloading.

Air ambulances carried out by this aircraft only involve ambulatory patients, meaning that the aircraft interior does not need reconfiguration to accommodate a stretcher.

Due to its length and tail height, the GIV can only be hangared in bay three, nose in.

A daily inspection of the GIV will take two technicians approximately one hour.

Learjet

As for the GIV, the Learjet's main tasking is ministerial air transport (MATS). Similarly, these can depart anytime from 0600 to 2300, and return at any time of the day or night. These flights board at the VIP ramp, unless there is an overlap with a GIV departure/arrival or the VIP ramp is occupied by a visiting aircraft, in which case the Learjet is parked on the ramp outside bay three of hangar five. The aircraft must be positioned on the VIP ramp one hour before departure. Refuelling of the aircraft is not done until one or two hours before dispatch. Toilet and galley are generally not serviced on return. The ramp crew assists with baggage loading and unloading.

The Learjet also carries out air ambulance missions. Is this case, the aircraft is usually parked outside bay three of hangar five, to facilitate ambulance access to

the ramp via the access road, while minimizing vehicle incursion onto the ramp area. If the patient involved is ambulatory, no change to the aircraft interior configuration is required. If the mission requires a stretcher, then some of the passenger seats must be removed and the Lifeport stretcher system fitted. This operation takes two or three personnel approximately one and a half hours.

The Learjet is normally parked behind the port wing of the CASA parked in bay two, nose pointing towards the ramp. The tail fin of the Learjet is higher than the underside of the CASA aircraft, so if the Learjet needs to be placed on the ramp, the CASA parked in bay two must be removed beforehand.

A normal daily inspection will take two technicians approximately one hour.

Airbus Military CASA CN235

These aircraft carry out maritime patrols 7 days a week. Normally dispatches take place between 0800 and 1000, for a 6-hour patrol. To exploit extended daylight during summertime, double patrols may be performed, e.g. leaving at 0700, returning at 1300, and departing again after an hour's turnaround to refuel and change crews.

CASAs are normally dispatched from in front of the bays they are towed from, normally bays one and two. If both aircraft are due to depart around the same time, one will have to be parked somewhere other than on the ramp in front of bay one. Due to space restrictions on the ramp outside bays one and two, a CASA parked outside bay one would not be able to taxi past another – possibly delayed - CASA parked outside bay two.

When being refuelled, CASAs are sensitive to slopes that cause the aircraft to incline laterally. The aircraft will refuel properly when parked on level ground or with their longitudinal axes along the centerlines of their respective bays, but when parked elsewhere on the ramp, inclinations caused by the drainage profile of the ramp can cause fuel imbalances or under- or overfilling of aircraft tanks.

CASAs perform the bulk of the unit's air ambulance missions.

As per the Learjet, no reconfiguration is required for ambulatory patients. If the patient requires a stretcher, then a partition, an observer's seat and a raft launcher need to be removed and the anchor points for a stretcher are installed. These tasks will take three personnel about an hour.

As per the Learjet, boarding for air ambulance missions takes place adjacent to the access road outside bay three.

With the exception of double patrols, refueling is not normally carried out post-mission. The aircraft is normally left fuel light until shortly before a mission, since, if an air ambulance is required, the aircraft may have to travel to a regional airport where restricted runway length makes aircraft landing or takeoff weight an issue. For engine start, CASAs require an electrical ground power unit (GPU) to supply the large current necessary for engine start. Engine start requires two personnel: one standing in front of the aircraft maintaining communication with the flight crew, another to disconnect and tow away the GPU when both engines have started.

CASAs are hangared in bays one and two, nose pointing towards the ramp.

A normal daily inspection of a CASA will take two technicians approximately one hour.

Defender

The Defender is a Garda Air Support Unit (GASU) aircraft and is on standby 24 hours a day, every day. The aircraft is normally hangared at about 2330 each night, but remains on standby while hangared. A preflight inspection is carried out in the morning, and the aircraft is placed back on the ramp for 0700.

The Defender is normally parked on the south side of the main ramp, northeast of the control tower, so that other aircraft operating around, or parked on, hangar five's normal ramp area do not impede its dispatch.

Its operational nature dictates that Defender flights can occur at short notice at any time and be of any duration. Dispatches are attended by two technicians, the first notice being a phone call from GASU requesting the aircraft be connected to electrical power. As per the CASA, engine start requires a GPU¹ and, therefore, two technicians. Both technicians must attend the aircraft until engine start and waiting time can vary from none to up to 45 minutes. A normal daily inspection takes two technicians approximately 40 minutes. The Defender is normally hangared close to the hangar doors between bays two and three, nose pointing toward the ramp. Care must be taken hangaring this aircraft as its tail comes close to the port wingtips of the GIV and Learjet.

FR172 Cessna

Two or three Cessnas are usually required on the ramp ready for departure before 1100 each day. However, operations can occur at any time. A close radio watch needs to be maintained on Cessna activity, as an unmarshalled Cessna could park in an area of the ramp that could cause inconvenience to other returning or departing aircraft. Marshalling these aircraft to a suitable area not only prevents possible inconvenience to other movements, but also saves the ramp crew the effort of repositioning a Cessna, as these aircraft are moved by hand. Cessnas are always fully refueled on return, the exception being an aircraft being used for target drogue towing, due to weight limitations.

Cessnas are usually hangared last, being placed between the larger aircraft and adjacent to the hangar doors.

A normal daily inspection of a Cessna will take one technician 30 minutes.

¹ Ground Power Unit: This is a portable generator used to provide power while aircraft are on the ground and to provide power for aircraft start-up.

Ramp Crews

Day Ramp Crew

Daytime aircraft ground handling and first line maintenance is carried out by a four-person ramp crew, consisting of a Sergeant (crew leader) and three others of Corporal or Airman rank. From Monday to Friday, the duty period for day crews is from 0900 to 1900. The duties of the day crew are as follows:

- 1. Dispatch of aircraft that have been parked on the ramp by the off going night crew. (aircraft departing after 1100 will generally be still hangared)
- 2. Towing aircraft out of the hangar for dispatch.
- 3. Marshalling of returning aircraft.
- 4. Refuelling of departing and returned aircraft as required.
- 5. Servicing of galley fluids and toilet waste disposal.
- 6. Rectification of defects reported post-flight, or, where rectification of a particular defect does not fall within the scope of the ramp crew's abilities, the organization of the appropriate personnel to do so (e.g. avionics).
- 7. Carrying out of desalination engine washes post maritime operations.
- 8. Re-hangaring of aircraft that have completed operations for the day.
- 9. Marshall and refueling of visiting aircraft.
- 10. Maintaining a listening watch on the crew phone.
- 11. Maintaining a listening watch on the control tower radio frequency for returning aircraft, in order to meet them on the ramp.
- 12. Obtain tower clearance when crossing taxiway bravo or entering the main ramp area.
- 13. Ensure that the most up to date information regarding aircraft movements is obtained from the unit's operations planning sources.

Before 1630 each weekday a No 1 Ops Wing planning proforma is compiled and supplied to the day crew. This document details the air movements for the next day and crew uses this to update the whiteboard in the crew room, which forms the basis of the hand-over to the night crew at 1900.

The Friday afternoon proforma covers Saturday, Sunday and Monday.

Night Ramp Crew

After-hours aircraft ground handling is carried out by a crew with the same composition as the early crew. Night crews begin their duty period at 1900 with a hand-over from the day crew, and, in turn, hand over to the next day crew at 0900 the following morning. The duties of the night crew are as follows:

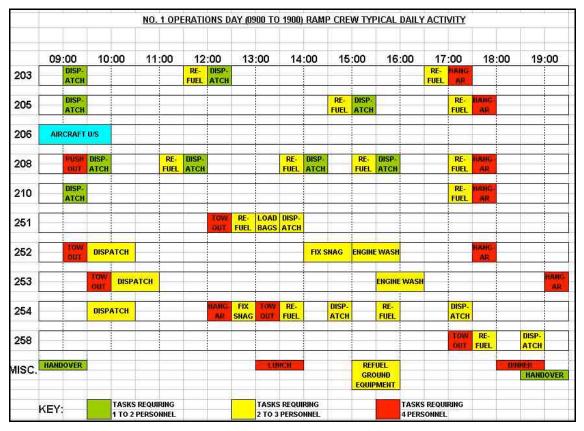
- 1. Marshalling of returning aircraft.
- 2. Refuelling of aircraft for next day's operations.
- 3. Rectification of defects reported post-flight, or, where rectification of a particular defect does not fall within the scope of the ramp crew's abilities, the organization of the appropriate personnel to do so (e.g. avionics).
- 4. Carrying out daily inspections of aircraft for the next morning.
- 5. Daily inspection of Defender in the morning.
- 6. Maintain a listening watch on the crew DECT phone.
- 7. Maintain a listening watch on control tower radio frequency for returning aircraft.
- 8. Ensure that the most up to date information regarding aircraft movements is obtained from the unit's operations planning sources.
- 9. Obtain tower clearance when crossing taxiway bravo or entering the main ramp area.

Weekend Ramp Crews

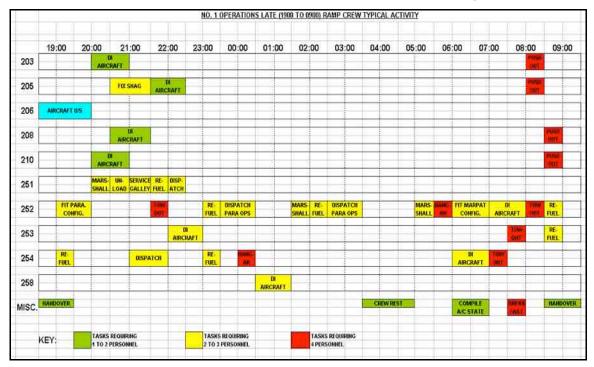
Because there are fewer air operations at weekends or on bank holidays, the duty period for the ramp crew at weekends is 0900 Saturday to 0900 Sunday, and 0900 Sunday to 0900 Monday.

The duties of these24-hour ramp crews incorporate those for both day and night weekday ramp crews.

Appendix 1. Typical Task/Dispatch Schedule for Day/Night Crews



NOTE tail numbers by aircraft type: 203,205,206,208 and 210: Cessna, 251: GIV, 252 and 253: CASA, 254: Defender, 258: Learjet



Appendix 2. Tables of Time and Resources Used per Task for Each Aircraft

NOTE: the right-hand column (S/C) identifies whether the task is sequential (S), e.g. no other task can be performed at the same time, or concurrent (C), meaning that other tasks can be completed while this task is being performed. For example, a daily inspection can be completed while the lifeport is being fitted. However, during refuelling, other tasks cannot be performed.

	CESSNA					
TASK	PERS.	TIME	EQUIPMENT REQUIRED	S/C		
Daily inspection	1	30 min	Torch, oil, tyre gauge	S		
Positioning onto ramp	4	10 min	Towbar, chocks	S		
Refuelling	2	15 min	Fuel truck	S		
Positioning into hangar	4	10 min	Towbar, chocks	S		
Install target drogue	2	1 hr 30 min	Toolbox × 2, Drogue kit	S		

	GIV					
TASK	PERS.	TIME	EQUIPMENT REQUIRED	S/C		
Daily inspection	2	1hr	Torch, oil, tyre gauge, GPU	S		
Positioning onto ramp	4	15 min	Towbar, towcar, chocks	S		
Refuelling	2	20 min	Fuel truck	s		
Positioning into hangar	4	15 min	Towbar, towcar, chocks	S		

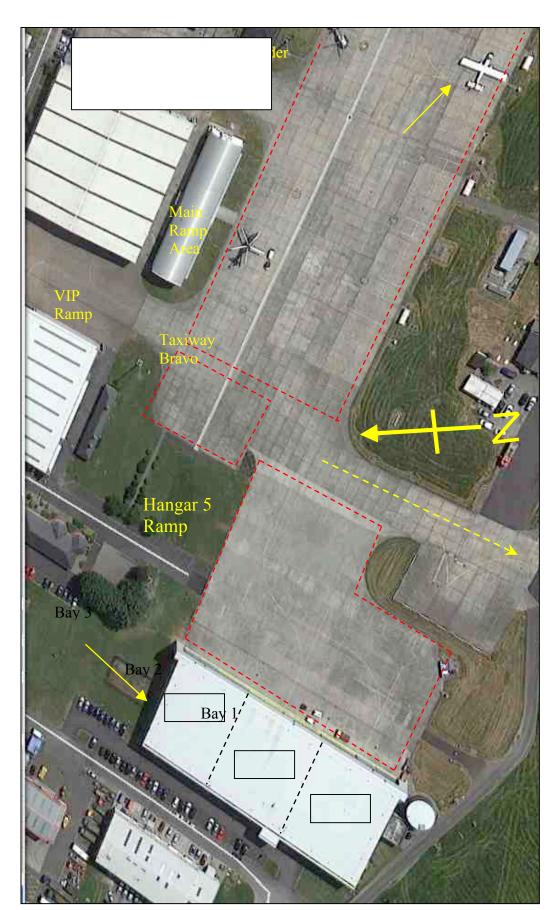
		Learjet		
TASK	PERS.	TIME	EQUIPMENT REQUIRED	S/C
Daily inspection	2	1 hour	Torch, oil, tyre gauge, GPU	S
Positioning onto ramp	4	10 min	Towbar, towcar, chocks	S
Refuelling	2	15 min	Fuel truck	S
Positioning into hangar	4	10 min	Towbar, towcar, chocks	S
Reconfigure for air ambulance	2	1hr 30mins	Toolbox X 2, LifePort, GPU	C¹

1. Lifeport can be fitted while a daily inspection is carried out

		CASA		
TASK	PERS.	TIME	EQUIPMENT REQUIRED	S/C
Daily inspection	2	45 min	Torch, oil, tyre gauge, GPU	S
Positioning onto ramp	4	10 min	Towbar, towcar, chocks	S
Refuelling	2	15 min	Fuel truck	S
Positioning into hangar	4	10 min	Towbar, towcar, chocks	S
Reconfigure for air ambulance	2	45mins	Toolbox, stretcher, GPU	C¹

1. Reconfiguration can be performed while a daily inspection is carried out.

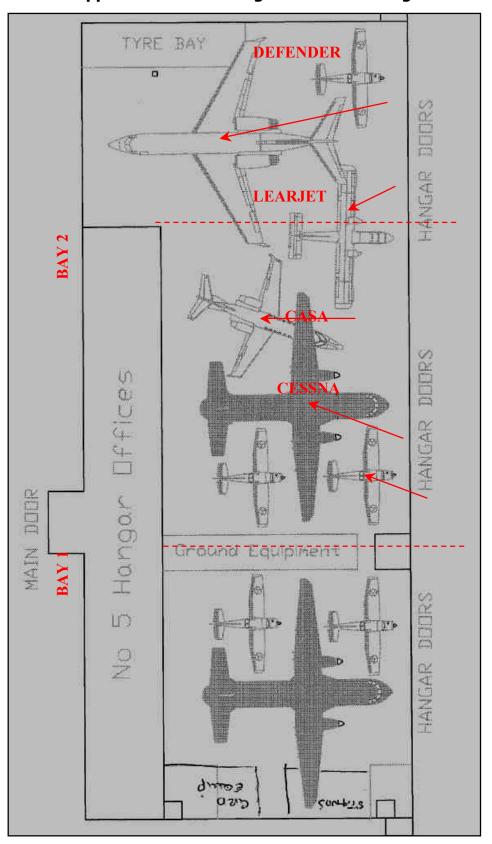
		Defender		
TASK	PERS.	TIME	EQUIPMENT REQUIRED	S/C
Daily inspection	2	40 min	Torch, oil, tyre gauge, GPU	S
Positioning onto ramp	4	15 min	Towbar, towcar, chocks	S
Refuelling	2	15 min	Fuel truck	S
Positioning into hangar	4	15 min	Towbar, chocks	S



Hangar 5

Appendix 4. No. 5 Hangar Aircraft Parking

GIV



Annex B

Number 3 Operations Wing Ramp Crew

Contents

Overview	B-2
Aircraft Operational Overview	B-2
Ramp Crews	B-4
Appendix 1	
Tables of Time and Resources used per Task	B-5
for Each Aircraft	
Appendix 2	
Diagram of No. 3 Ops Wing Ramp Area of Operations	в-8
Appendix 3	
Diagram of No. 3 Hangar Aircraft Parking	в-9

Overview – No.3 Operations Wing Ramp Crew

No3 Ops Wing is the helicopter unit based in Casement Aerodrome, Baldonnel. The unit is located in number 3 hangar, from where it operates eight aircraft of two different types as follows:

1.	2 x EC135P2+	Pilot Training platform, Air Ambulance & Neo-
		natal, Army Support, VIP transport, Cargo
		Operations, etc.
2.	6 x AW139	Army support, Counter terrorism Insurgence,
		Emergency Aeromedical Service EAS, VIP
		transport, Air Ambulance inter-hospital
		transport & neo-natal, cargo operations, fire
		fighting support, etc

With the exception of the Air Ambulance (EAS) helicopter (on Duty in Custume Barracks, Athlone – in the Irish midlands) operations involving these helicopters are dispatched from, and return to, the ramp area immediately outside Number 3 hangar.

Aircraft Operational Overview

EC135P2+

The EC135P2+ main tasking is helicopter training. This generally requires a departure and return anytime from 0800 to 1700. Night Vision Goggle (NVG) training will require training at night and generally occurs from last light to anytime up to 0400. Clearance must be obtained from the control tower before maneuvering any aircraft from hangar three onto the ramp. Refueling of the aircraft is generally carried out when the aircraft is brought to the ramp or when an aircraft returns to the ramp.

Air ambulances carried out by this aircraft only involve the fitting of the Air Ambulance interior fit which includes a medical floor, equipment carriers, doctors seats and a stretcher system.

A daily inspection will take two technicians approximately one hour.

AW139

The AW139's are used to service the Air Ambulance Service Level Agreement with the Irish National Health Service (HSE) and the helicopter is based in Casement AB. The AW139 is also used to service the EAS Program (Emergency Aeromedical Service) from Custume Barracks, Athlone.

The Air Ambulance service requires a specific air ambulance role equipment (includes a medical carrier and stretcher system and medical equipment rack) to be fitted to the aircraft prior to being brought to the ramp.

The AW139 can depart Baldonnel anytime 24 hours per day, and return at any time of the day or night.

The Serviceable AW139 and EC135 aircraft are usually parked in the south side of the hangar and aircraft undergoing maintenance are parked in the North side.

A normal daily inspection will take two technicians approximately two hour.

Technical Crews

Early Technical Crew

Daytime helicopter ground handling and first line maintenance is carried out by a two person ramp crew, consisting of a Corporal (crew leader) and an Airman. Each day an Inspector is rostered to assist the tech crew until 2200. The duty period for early Tech Crew is from 0800 to 1700. The duties of the early tech crew are as follows:

- 1. Towing aircraft out of the hangar for dispatch.
- 2. Refueling of departing and returned aircraft as required.
- 3. Rectification of defects reported post-flight, or, where rectification of a particular defect does not fall within the scope of the ramp crew's abilities, the organization of the appropriate personnel to do so (e.g. avionics).
- 4. Carrying out of desalination engine washes post maritime operations.
- 5. Re-hangaring of aircraft that have completed operations for the day.
- 6. Obtain tower clearance when entering the main ramp area.
- 7. Perform daily inspections on all serviceable aircraft when required.
- 8. Install or remove specific role equipment.
- 9. Perform a handover to the late tech crew.

Late Ramp Crew

Late crews are of the same structure as the early crew. Late crews begin their duty period at 1600 with a hand-over from the day crew, and, in turn, hand over to the next day crew at 0800 the following morning. The duties of the late crew are the same as that of the early crew.

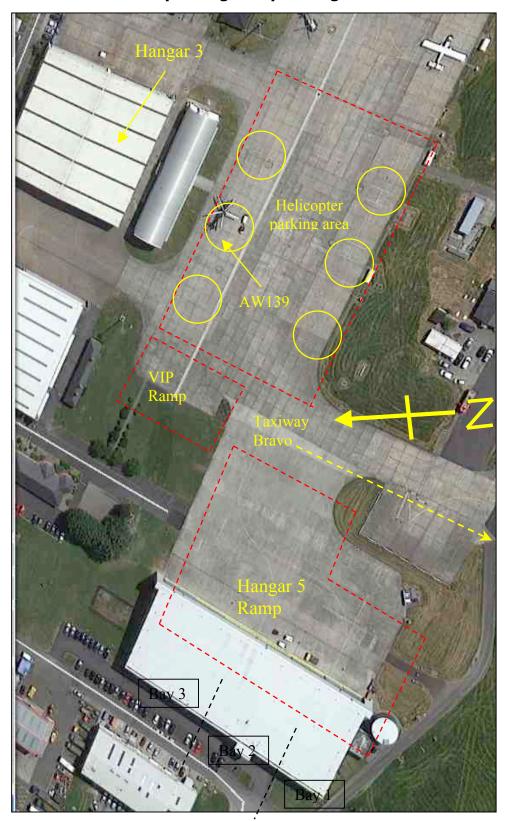
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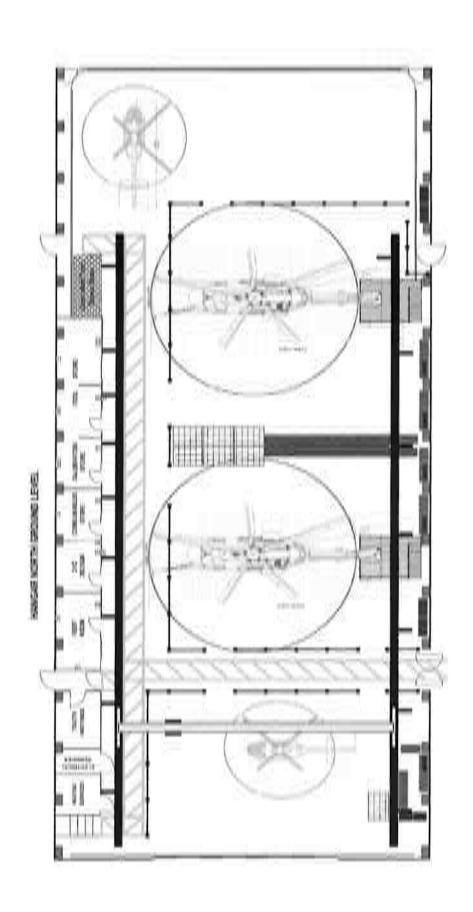
EC135P2+				
TASK	PERS.	TIME	REQUIREMENT	S/C
Daily inspection	1	1 Hr	Torch, oil, basic tools	S
Positioning onto ramp	2	10 mins	Towbar, chocks	S
Refueling	1	15 mins	Fuel truck	S
Positioning into hangar	2	10 mins	Towbar, chocks	S
Fitting role equipment	2	1 Hr	Inspector	С

AW139				
TASK	PERS.	TIME	REQUIREMENT	S/C
Daily inspection	1	1 Hr	Torch, oil, basic tools	S
Positioning onto ramp	2	10 mins	Towbar, chocks	S
Refueling	1	15 mins	Fuel truck	S
Positioning into hangar	2	10 mins	Towbar, chocks	S
Fitting role equipment	2	1 Hr	Inspector	С

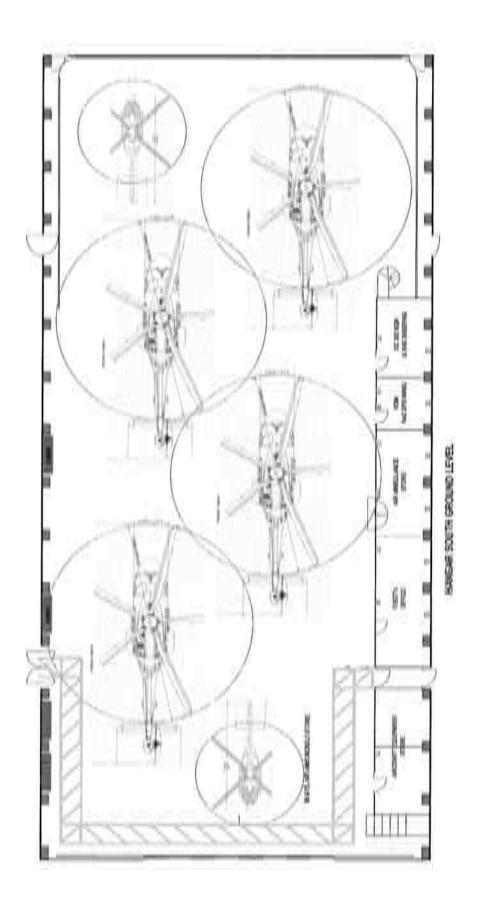
Appendix 2
No3 Ops Wing Ramp Arrangement



Appendix 3 No. 3 Hangar Aircraft Parking



ANNEX B - PAGE B-9



ANNEX B – PAGE B-10

<u>Annex - C</u> <u>Air Corps College - Flight Training School Ramp Crew</u>

Contents

Overview	C-2
Aircraft Operational Overview	C-2
PC9M	C-2
Ramp Crews	C-3
Daily Ramp Crew	C-3
Air Firing Exercise Ramp Crew	C-4
Appendix 1	
Tables of Time and Resources used per Task for Each Aircraft	C-5
Appendix 2	
FTS Ramp area Operation	C-6
Appendix 3	
Typical Task/Dispatch Schedule for FTS Ramp (Daily Routine)	c-7
Appendix 4	
Typical Task/Dispatch Schedule for FTS Ramp (During Air Firing Exercise)	C-8

Overview – Flight Training School Ramp Crew

The Flying Training School (FTS) is the squadron within the Air Corps College, responsible for the training and education of all Cadets. Its primary role is to conduct;

- Ab initio flying training,
- Advanced pilot training
- Instructor Pilot Training
- Close air support.

Aircraft Operational Overview

PC9M

The PC9M aircraft tasking is to operate as the main pilot training aircraft. Four training slots for four aircraft are scheduled each day to cater for the flying training syllabus (Refer to Appendix 2). The first slot is scheduled to be airborne at 09:30 and the last slot airborne at 15:30. All PC9M aircraft must be prepared and parked in position 30 minutes before the aircraft is scheduled to be airborne. All aircraft are boarded at the FTS ramp area. Refueling of the aircraft is carried out during the turnaround inspection and after the final flight of the day. There are no waste of galley facilities installed on this aircraft. The PC9M operations are dispatched from and return to the one location on the ramp adjacent to the FTS buildings and hangar (Refer to Appendix 3&4).

An air firing exercise is held for 3 weeks each year. Two armed aircraft are required for an air firing exercise. The two aircraft are armed while pointed to the berm (Refer to Appendix 2). Two Ordnance technicians are required for the arming of the aircraft in addition to the aircraft technicians.

Ramp Crews

Day Ramp Crew

Daytime aircraft ground handling and first line maintenance is carried out by a four-person ramp crew, consisting of a Corporal (crew leader) and three others of Corporal or Airman rank. A Sgt inspector is also remains in the hangar for all unscheduled maintenance. From Monday to Friday, the duty period for day crews is from 0800 to 1800. The duties of the day crew are as follows:

- 1. Daily inspection of the four aircraft in the hangar scheduled for flights.
- 2. Tow the aircraft from the hangar and park the aircraft on the ramp to allowing time for the preflight inspection to be carried out.
- 3. Dispatch of aircraft that have been parked on the ramp by the off going night crew. (aircraft departing after 1100 will generally be still hangared)
- 4. Marshalling of returning aircraft.
- 5. Complete turnaround inspection which includes refueling of the aircraft.
- 6. Rectification of defects reported post-flight, or, where rectification of a particular defect does not fall within the scope of the ramp crew's abilities, the organization of the appropriate personnel to do so (e.g. avionics).
- 7. Carrying out of desalination engine washes once a week per airframe.
- 8. Re-hangaring of aircraft that have completed operations for the day.
- 9. Maintaining a listening watch on the crew DECT phone.
- 10. Maintaining a listening watch on the control tower radio frequency for returning aircraft, in order to meet them on the ramp.
- 11. Ensure that the most up to date information regarding aircraft movements is obtained from the squadron operations planning sources.

Air Firing Ramp Crew

Air firing ramp operations and first line maintenance is carried out by a sixperson ramp crew, consisting of a Corporal (crew leader) and five others of Corporal or Airman rank. Two Ordnance technicians are required to arm the aircraft as required. A Sgt inspector remains in the hangar for unscheduled maintenance. From Monday to Friday, the air firing duty crews is from 0700 to 1800. The duties of the day crew are as follows:

- 1. Daily inspection of the aircraft in the hangar scheduled for air firing exercise.
- 2. Tow the aircraft from the hangar and park the aircraft on the ramp to allowing time for the preflight inspection to be carried out.
- 3. Arm the aircraft while pointing to the berm.
- 4. Dispatch of armed aircraft
- 5. Marshalling of returning aircraft.
- 6. Disarming and making safe aircraft returning from air firing exercise.
- 7. Complete turnaround inspection which includes refueling and arming of the aircraft.
- 8. Rectification of defects reported post-flight, or, where rectification of a particular defect does not fall within the scope of the ramp crew's abilities, the organization of the appropriate personnel to do so (e.g. avionics).
- 9. Carrying out of desalination engine washes once a week per airframe.
- 10. Re-hangaring of aircraft that have completed operations for the day.
- 11. Maintaining a listening watch on the crew DECT phone.
- 12. Maintaining a listening watch on the control tower radio frequency for returning aircraft, in order to meet them on the ramp.
- 13. Ensure that the most up to date information regarding aircraft movements is obtained from the squadron operations planning sources.

Appendix 1. Tables of Time and Resources Used per Task for Each Aircraft

NOTE: the right-hand column (S/C) identifies whether the task is sequential (S), e.g. no other task can be performed at the same time, or concurrent (C), meaning that other tasks can be completed while this task is being performed. For example, a daily inspection can be completed while the lifeport is being fitted. However, during refuelling, other tasks cannot be performed.

PC9M				
TASK	PERS.	TIME	EQUIPMENT REQUIRED	S/C
Daily inspection	1	45 min	Torch, oil, tyre gauge	S
Positioning onto ramp	4	20 min (5min x 4)	Towbar, chocks	S
Turnaround Inspection	1	20 min	Fuel truck	S
Positioning into hangar	4	20 min	Towbar, chocks	S

Appendix 2. FTS Ramp Area of Operation

