COPY NO 40 OF 100 COPIES 9/3

DCDS(I) 26 5/21

CDS
CNS
CGS
CAS

Copy to:

PS/S of S
PUS
Min(AF)
VCDS(P&L)
VCAS
DUS(P)
ACDS(Pol)
ACDS(Ops)
ACAS(Ops)
ACNS(O)
DMO
SECCOS - (3)
AUS(D Staff)

S 7/5

seen by SofS

CAPABILITIES OF THE ARGENTINE ARMED FORCES

Reference:

A. DCDS(I) 26 dated 7 April 1982

1. We have continued the up-dating of our assessment of "The Capability of the Argentine Armed Forces". The new 3rd Edition, which I attach, reflects the recent intelligence we have received mostly from the United States and France following CDS' initiative with his opposite numbers.

2. I have sidelined those parts of the paper, and its annexes, which differ from its predecessor. We have tried to clear the judgements we have made with your staffs, but inevitably the process has been a touch rushed. Perhaps therefore they could report any major areas of disagreement?

3. On a note of detail - Roland. I apologise for having misled you in an early Chiefs of Staff meeting. We now believe that the Argentines have 2 Roland fire units, but only one with a fire control radar, on an evaluation trial.

4. Copies of the paper have already been delivered to the Task Force.

DCDS(I)

16th April 1982

THE CAPABILITY OF THE ARGENTINE ARMED FORCES

INTRODUCTION

1. The Prime Minister has stated that HMG's aim is to achieve the withdrawal of Argentine Forces from the Falkland Islands and the Dependencies and to re-establish the British Administration. A Royal Navy Task Force has set sail for the South Atlantic. The Chiefs of Staff are considering the military options available and have directed that the Defence Intelligence Staff assess the capability of the Argentine Armed Forces to counter any United Kingdom military action in the South Atlantic designed to regain possession of the Falkland Islands.

AIM

2. The aim of this paper is to determine the capability of the Argentine Armed Forces to defend the South Atlantic and Falkland Islands against the United Kingdom Task Force.

ASSUMPTION

3. We assume that HMG will not order any action, other than special operations, against the mainland of Argentina.

SCOPE

4. We first give our assessment of the overall capability of the Argentine Armed Forces. We then look in some detail at the Argentine capability to defend South Georgia, the South Atlantic Ocean and the Falkland Islands before discussing the Argentine Armed Forces strengths and vulnerabilities and finally drawing our conclusions.

THE ARGENTINE NAVY

General

5. The Argentine Navy has a strength of about 30,000 men of whom some 30% are conscripts. Some of the professional officers and senior ratings are described as very good but these are in the minority. Of the 13 principal surface units 8 are more than 35 years old. By contrast the three French-built frigates and the two British Type 42 destroyers are modern, well armed and appear to have the pick of key personnel. The submarine force is similarly mixed, having one operational elderly Guppy type and two 8 year old German-built 209 Class. The Naval Air Force has some 50 aircraft, of which 21 usually comprise the Carrier Air Group. The Marine Corps (or Naval Infantry) has some 7,000 men.

6. The strength of the Navy lies in its ASVW capability. The EXOCET MM 38, similar to the Royal Navy version but with a less sophisticated homing head, is fitted to nine frigates and destroyers and also to the elderly cruiser. The present state of serviceability is unknown. The two German submarines are small, fast, quiet and well-armed. These modern units would, however, have to be positioned very accurately and handled with tactical skill to exploit their capabilities. We assess that the Navy lacks both tactical training and the logistic support fully to exploit their potential. Other weaknesses include a paucity of ocean reconnaissance assets and severe deficiencies in the radars of the older ships. It is reported that the Navy has seldom operated at night during normal exercises. Details of ships are shown in Annex A.

Anti Surface Warfare

7. Surface surveillance is provided by two P2E Neptune and six carrierborne S2E Tracker aircraft, and by HFDF fitted in surface ships and submarines. The ship-fitted EXOCET is simple and rugged but only one practice firing has been reported. The carrier borne A-4 aircraft are most likely to be armed with bombs, although the radio control MARTIN PESCADOR ASM with a range of 5 nm may be used. Five SUPER ETENDARDs are reported to be fitting AM39 EXOCET, these are forecast to be operational by about 20th April. The carrier is believed to be able to operate the aircraft fully loaded but it has yet to do so. The two 209 Class submarines have the German SST torpedos and the Mark 37.

Anti Air Warfare

8. The A-4s of the Carrier Air Group are armed in the air defence role with two Sidewinder and 2 x 20mm cannon. They are trained to USN standards although they do not generally operate at night. The main air surveillance radars in the Carrier have suffered maintenance difficulties in the past and may be degraded. Both the Type 42 Destroyers have Sea Dart; the system in the second of the ships is known to have had defects which caused excessive miss distances in trials. The fire control systems in the old destroyers have considerable maintenance problems and are probably inadequate against modern aircraft and missiles.

Anti Submarine Warfare

9. Tracker and Sea King are used for ASW, the French DUBA 25 Sonar in the Type A-69 Frigates is reported as efficient but the Type 184M in the DLGs is believed to be poorly maintained. All escorts carry Mk 44 ASW Torpedoes. The ex-US Destroyers have Hedgehog and depth charges, and the French-built Frigates have a 2,200 metres range mortar. The Navy is believed to be proficient in set-piece ASW exercises but experience in tracking nuclear submarines is limited. The 209 Class Submarines are possibly the most effective platform but they are limited in mobility.

Mine Warfare

10. Very little intelligence is available on mining capabilities. Air-laid sea bed mines are amongst those known to be held and the Guppy could lay mines if suitable types are held. There is little evidence of mine laying exercises but on the other hand the presence of six TON class minesweepers/ mine hunters suggests such a capability.

Serviceability

11. All of the major surface units are believed to be operational with the exception of the two Fletcher Class destroyers. One of the two Guppys has been in harbour for some time and is reported as nonoperational, while one A-69 Frigate was slightly damaged during the occupation of South Georgia. The single fleet oiler was undergoing repairs at USHUAIA before Easter.

THE ARGENTINE ARMY

12. The Army has a total strength of some 85,000; this is made up of a regular cadre of officers and SNCOs with junior ranks being found from 1-year conscripts. Mobilisation plans exist but the Army's strength is not a limiting factor in the defence of the Falkland Islands

13. The tactical organisation of the Army is built round 12 brigades. Tactics and organisation follow the United States model but with local variations. There is an airborne brigade which is held at Cordoba as a strategic reserve. A more detailed account of the Army's capability and organisation, with reference, where appropriate, to the Marines, is at Annex B.

14. Training is generally effective, but the large proportion of 1-year conscripts, with the resultant turnover, limits the scope of training to company and platoon level; formation exercises are infrequent. There is little evidence of joint training of any sort. Although the army wide standard of all arms training must therefore be assessed as at the best weak, elite units (such as the Airborne Brigade and Marines) probably maintain a higher standard. The Army's morale and national pride are good, but its effectiveness, particularly under testing conditions and after one or two reverses, is more open to question.

15. The Army is equipped with a mixed collection of weapons and vehicles, much of which has been acquired since 1977 from the United States and Western Europe, although some is

local manufacture. Since the garrisons on the Islands will, however, not absorb anything like the total army strength, we can expect that they will be equipped with a choice of weapons designed to make the best use of what is available.

THE ARGENTINE AIRFORCE

General

16. The Argentine Air Force consists of 20,000 men, half of whom are conscripted for 12 months. There are some 300 aircraft of which only 175 have a combat capability. Most of the aircraft are old and equipped with simple weapons systems which limit their effectiveness at night and in poor weather. There is a general shortage of spares which restricts aircraft availability and financial constraints have limited flying training. There is little serious night flying and few intensive operations. Nevertheless it seems that, within these limitation pilots fly their aircraft with dash and flair. Providing their confidence is sustained and the weather is good the Argentines would make testing adversaries.

Deployment

17. The Argentine Air Force (AAF) is organised for a land war against Chile and the majority of their operational units are deployed on the many air bases in the North. Most of these will have to redeploy to 3 major airfields in the South; RIO GRANDE, RIO GALLEGOS and COMMODORO RIVADAVIA. These are well found bases located some 400 nm West of the Falkland Islands and will be of prime importance in any campaign in the South Atlantic. Details are at Annex C.

Offensive Support

18. The Argentine Air Force has about 130 dedicated offensive support aircraft: Full details are given in Annex C. Fifty-three of these are the Turbo-Prop COIN aircraft, the PUCURA, which has a useful anti helicopter and close support capability. It would be suitable for basing on the Falkland Islands as it can operate from grass surfaces.

19. The long range attack aircraft are the 6 Canberras and 53 Skyhawks. The Canberra can carry 8000 lbs of weapons and has a radius of action (1) of 750 nm, the corresponding figures for the Skyhawk are 2000 lbs over 620 nm. The Skyhawks have an inflight refuelling capability. The Canberra and 33 Skyhawks with the designation A4B have only a visual weapons delivery capability. The remaining 20 Skyhawks, designated A4C, have a radar (AN/AGP53) which gives them a rudimentary night/poor weather capability.

20. The Argentines also have 36 Mirage V. These aircraft were purchased from Israel where they were known as MESHER. The primary role of these aircraft is offensive support but they also have a secondary air defence capability by day. The Mirage V has a radius of action (1) of 580 nm with 1700 lbs of weapons.

21. Weapons. Argentine offensive aircraft will be armed with bombs and rockets (2). They might also be equipped with their own radio command guided missile, the PESCADOR, which has a maximum low level range of 5 nm and a warhead of 88 lbs.

Note:

1. HI-LO-HI with 30 minutes time on target.
2. 88 mm SNEB, 2.7 inch and 5 inch.

It is a fair weather weapon of unimpressive performance. The effectiveness of these weapons against ships is low.

Air Defence

22. The Argentine air defence force consists of 14 Mirage III and 8 F86s. The latter are apparently in reserve status and are discounted. The Mirage III has an all weather capability but its fire control system is ineffective at low altitude. Its radius of action, with its normal weapons the Matra R530 and R550, is 650 nm. The Mirage III also has a secondary attack role when its radius of action with 1700 lbs of weapons is 550 nm.

23. Only a small number of air defence/air traffic radars exist in Argentina. However, they do possess some six TPS 43 air transportable radars. At least one of these has been moved to Port Stanley. The TPS 43 should detect a fighter size target at high level at 240 nm and at the radar horizon at low level, say, 25 nm. See Annex D.

Transport Force

24. The Argentine Air Force has 23 transport aircraft (7 x C130 and 16 x FOKKER 27/28) capable of reinforcing the Falklands. Used at a high rate the serviceability would drop rapidly as there is a shortage of skilled maintenance and spares.

DEFENCE OF SOUTH GEORGIA

25. Terrain. The Island is uninhabited, rocky, largely barren, steeply mountainous and permanently covered by ice and snow. The central spine (The Allardyce Range) rises to heights of over 2000 metres and the summer snow line lies at a general altitude of 460 metres. There are no roads or tracks passable to either wheeled or tracked vehicles. GRYTVIKEN and PORT LEITH are the sites of old whaling stations and the only evidence of habitation. The coastline is steep, rocky and heavily indented. The best approaches are on the NE side of the island where almost all the bays have deep, clear entrances. Landing by LCT would be possible at the head of nearly all these bays.

26. Argentine Intentions. About 50 Argentine Marines were known to have been landed on South Georgia at the start of hostilities, with orders to secure Port Leith and Grytviken. They are lightly armed but they were instructed to offload sufficient stores for a prolonged stay. Since the island is some 700 nm east of the Falklands, reinforcement of the Marines can only be undertaken by sea and this would take considerable time and much effort. There are now indications that some or all of the marine amphibious force known to have landed at Port Stanley may have been redeployed. We consider that any such redeployment is most likely to have been within the Falkland Islands group, but it cannot be discounted that some marines may have been sent by sea to South Georgia in order to bolster up the very small number of troops there. South Georgia has at present little military value, but because it is a Falkland Islands Dependency

it has real political significance. It is remote, the environment is hostile, and a major defence operation would absorb enormous resources. In particular the operation would stretch the relatively small Argentine Navy to the extent that it would prejudice the security of the much more important Falkland Islands. Our assessment therefore is that the Argentines will not substantially increase the size of the present Marine force on South Georgia, and it is unlikely that they will seriously contest any reoccupation by the UK.

DEFENCE OF THE SOUTH ATLANTIC

Concept of Operations

27. When considering his best course of action in defending the approaches to the Falkland Islands against the Task Force the Argentine commander will be faced with a dilemma. He can take his principal ships forward to challenge the Task Force, thereby exposing himself to the SSNs, or he can keep in shallow water and use his aircraft as the attack medium. If he takes the former he risks losing a major part of the Argentine Navy. If he adopts the latter he would be open to censure should the UK regain the Falklands.

28. There can be little doubt that the Argentine commander will be concerned at the possibility of a confrontation with the SSN, and he will be anxious to preserve his ships if only to guard against future domination by Chile. On the other hand the invasion of the Falkland Islands has rekindled the nationalist spirit and he may well take the bolder step. We assess that he will hold back at least until he believes he has identified the intentions of our Task Force. This will not preclude attacks on the Task Force by offensive support aircraft, including carrierborne aircraft, on the Task Force out to their practical radius of action, of say, 550 nm.

Detection of the Task Group

29. In any event the first problem facing the Argentines in their Southern Atlantic Ocean operations is to locate our Task Force. The only applicable air assets they possess are the 2 Neptune and 6 Trackers normally dedicated to the carrier. Although the Neptune has a radar which could give up to 80 nm range on the the Task Force and the aircraft has a radius of

action of about 1800 mn, its patrol speed is only 170 Kts and the Neptune can sweep only a comparatively small area of the South Atlantic. Furthermore, intensive operations would be difficult to sustain with only 2 old aircraft which are difficult to keep serviceable. The Tracker, which could be operated from the Falkland Islands or from the carrier, has a much shorter radius of action; some 550 nm and it can only remain on task for 4 hours at 100 nm. This aircraft is, however, likely to be also in high demand to provide ASW protection for the Fleet which will limit its availability for ocean surveillance. Both aircraft would be vulnerable to the air defences of our Task Force, and overall their capability cannot therefore be rated highly.

30. The 3 operational Argentine submarines might detect the Task Force, but in order to do so they would have to be positioned accurately since their sonar detection range would not exceed 20 nm. All the submarines are slow and they could not reposition successfully once they had dropped behind the Task Force. The Guppy is unlikely, because of its age, to sail deep into the Atlantic. It seems much more probable, given the low speed of the submarine, that it may instead be deployed relatively close to the Falklands so that it could more quickly rejoin operations. It would be disastrous for the Argentines if it was deployed well forward only to be by-passed.

31. HF/DF Stations at RIO GRANDE and possibly at TRELEW and COMMODORO RIVADAVIA as well as those at sea, might obtain bearings or a fix on the Task Force, but it is assessed that it will be impossible for the unsophisticated Argentine SIGINT Organisation to break our secure transmissions. We must, however, expect the Soviet Union to help the Argentines and the position of the Task Force Force could well be disclosed by other countries friendly to the Argentines.

Attack on the Task Force

32. The longest range threat to the Task Force is potentially that from the three Argentine submarines; but they are difficult to position accurately given their slow speed and the short detection range of their sonar. In an engagement, the two Type 209 submarines are extremely quiet and will not present an easy target

33. The shore based air threat to the Task Force would be from the 100 plus Argentine offensive support aircraft we have mentioned earlier. They will, however, be unable to locate or to attack in other than visual conditions and, given their weapons fit, they will not present a formidable threat. The Argentines have two KC130 tankers and the A4 also has a practised "buddy" in-flight refuelling capability. This would enable the Argentines to extend the range of the A4s but it would reduce the size of the attacking force. In view of this and the detection problem we doubt that the Argentines will adopt this tactic.

34. The Argentine Carrier, with its aircraft, also poses a threat, but the ship is very vulnerable to counter action, especially by our SSNs. The Super ETENDARD, if operated from the carrier, using its AM39 missile would be a serious threat, but there are only 5 aircraft and 5 missiles. The A4 will be of much less consequence.

35. Nine destroyers/frigates and the cruiser are equipped with EXOCET which has a stand-off range of some 24 miles. Given the defensive capability available we do not believe that this missile will pose too significant a threat to the Task Force; but as the Force approaches the Falklands the threat from shore-based air power will grow, particularly if the Argentines deploy the Super ETENDARD, A4 or Mirage to the airport at Port Stanley (Airport details at Annex D).

DEFENCE OF THE FALKLAND ISLANDS

Terrain

36. General. The Colony consists of about 200 small islands with a population of some 1,800. The total land area is 12,200 sq km. Most of this is accounted for by the two largest islands, East Falkland and West Falkland. East Falkland consists of a Northern and a Southern land mass, both of roughly equal size, joined by a short isthmus. (The Southern half is called La Fonia). Port Stanley is situated in the NE of East Falkland and accounts for 1,000 of the inhabitants, the remainder being thinly spread over East and West Falkland. The coastline is heavily indented and would provide numerous beach landing sites, although an abundance of kelp seaweed offshore would impose limitations. The highest ground is in the Northern half of East and West Falkland and is between 400m and 600m above sea level. It is not navigable by vehicle as even the passes between hills are filled with "rock rivers" making progress on foot slow and difficult. There are no trees except in a few places where they have been specifically planted, and as the majority of the land mass is below 30m, most of the ground is interlaced with brackish streams and bogs. The vegetation is largely grass, heath and heather with clumps of tussock grass up to 2m high. The scenery much resembles that of the Northern British moors and the Outer Hebrides.

37. Movement Overland. There are only 50 km of roads with a rolled stone and concrete surface and these are all in and around Port Stanley.

Elsewhere in the Islands local knowledge is essential for safe navigation by vehicle across country and even this is limited to half tonne, 4 wheel drive or possibly specially adapted snow vehicles such as BV 202. Tracks are inaccurately marked on the maps and in most cases do not exist. Movement progressively gets worse during the winter season (April to November). This summer however, has been particularly dry and this may marginally improve the going during the early winter months. The southern half of East Falkland (LA FONIA) has the best going and a landrover could in reasonable weather/ground conditions make 4 to 5 mph.

38. Beaches. The rugged and heavily indented coastline of the 2 main islands includes numerous beaches, although only approximately 20 are of any significance, sprinkled round both islands. Most are sandy, but there are also some of shingle and a few of mud. Lengths vary from a few yards to over a mile. Kelp is a problem in some areas.

Ground Forces

39. Current Situation. Considerable reinforcement of the initial Argentine occupation force has taken place since 2 April and we now assess that it totals approx 7000 men, the majority of which are thought to be located in and around Port Stanley. Our detailed assessment based on known establishment of the force as at 14 April is as follows:

a.	9th Inf Brigade	Strength
	No 25 Inf Regt	822
	No 8 Inf Regt	822
	No 37 Inf Regt (unconfirmed)	1,072
	No 9 Armd Car Recce Sqn	175
	Log Elms	865
		3,756
b.	No 17 Airborne Regt	822
	1 x Arty Grp (105mm)	607
		1,429
c.	Unidentified number of Amphibious Engineers.	- 180.
d.	601 AAA Bn (Unconfirmed)	- 675.
e.	Marines (Unconfirmed)	
	No 2 Marine Inf Bn	620
	No 4 Marine Inf Bn	415
		1,035

40. Equipment. Apart from the 2 VTP-7 amphibious tanked armoured cars already seen at Stanley and probably part of the 22 known to be held by Argentine Marines, three 90mm Canon tanks are reported as having been landed (possible Amx 13, Panhard AML H90 or ERC 90 S), whilst five more such tanks are expected shortly. Other equipments reported besides small arms are

106m Recoilless guns, 81mm and 120mm mortars, anti tank weapons (MAMBA and COBRA) and possibly some 40mm (2 and 4 barrel) anti aircraft artillery pieces. One 20 ft oval shaped radar has also been seen. Stores and equipment for the administrative support of the force will also have been landed.

41. Personalities. The following Argentine personalities are involved in the occupation of the Falkland Islands:-

a. General Benjamin Menendez - Governor.

b. General Osvaldo Garcia - Joint Commander of Forces.

c. General Americo Daer - Commander Land Forces and Commander 9 Inf Bde.

d. Rear Admiral Carlos Busse - Commander of Marines.

42. Argentine Intentions. The Argentines probably intend the final size of their occupying forces to be about the level achieved and we believe their aim will be to hold Stanley and its environs in strength whilst deploying two or three Battalion sized units to maintain token Sovereignty over the island group. We believe one such unit will be based in West Falkland probably at Fox Bay or Port Howard Settlements whilst another will hold Darwin and the Isthmus linking the two halves of East Falkland. They may conclude that further disipation of their forces will not only place upon them an unbearable administrative load but offer their enemy the opportunity to mount random heliborne mopping-up operations which would be difficult to counter. Since the Martime Exclusive Zone was imposed it is unlikely that they will risk further

reinforcement or stores movement by sea and the airport at Stanley will have assumed an even greater importance. We believe that attempts to improve the airfield and the defence of the airfield are in hand. We also believe that suitable assault landing beaches within striking distance of Stanley could be mined.

43. Defensive Preparations. The terrain will force the Argentines to adopt a static defence posture. There is little natural cover and the low ground is so soggy that although preparation of sangars on the high ground may be possible overhead protection cannot be achieved without the deployment of considerable engineer stores. Despite there being time before the arrival of our Task Force the nature of the terrain and shortage of helicopter lift capability may preclude this. They are able to prepare an obstacle plan and to position combat supplies as well as building helicopter pads but we doubt their ability to improve existing tracks. Artillery, engineer plant (eg for airfield maintenance) and mechanical handling equipment is probably included in the list of equipment being moved by sea. Once battle is joined the movement of reserves will be dependent on the use of helicopters. Without helicopters and at least local air superiority the administration and support of Argentine forces on the Falkland Islands will be extremely difficult.

44. Supporting Arms. Because the going is so bad the few available tanks may well be held in the Stanley area. The 105 mm artillery regiment will probably deploy within easy range of the airfield. The infantry will have its own integral mortar support found by up to eight 81 mm mortars per battalion.

45. Light Air Defence. We would expect to see deployed a proportion of both of their holdings of Blow Pipe (120 missiles/20 launchers), Tiger Cat (150 missiles/6 launchers) and possibly Roland (60 missiles/2 fire units). In addition they may have moved several 2 and 4 barrel 40 mm guns to the Islands. Only one Roland has a fire control radar. Local ground-based air defence will therefore largely be limited to daylight visual engagements in good weather. Helicopters are especially vulnerable. Full details of Tiger Cat's capability are given in Annex E.

46. Sustainability. We assess that the Argentines will have had time to stockpile sufficient supplies of ammunition and other combat supplies for a brief defence operation. They may have difficulty however, in providing sufficient stocks of artillery ammunition when the blockade is applied, provision of food (other than meat) and build-up of stores will depend entirely upon their air lift capability.

47. Water. The main source of fresh water is at Stanley where there is a pump house and filtration facilities designed to cater for the needs of the usual 1,000 inhabitants.

Water elsewhere is abundant but brackish. The civil population is used to making best use of incidental sources of water where as the Argentine Forces are likely to experience difficulty in this respect. We believe by rationing water in Stanley and increasing the frequency of water pumping, the requirements of 4-5,000 soldiers could be met. However, the continued supply of fresh water in the quantities required may become a problem.

48. Morale. The Commander of the garrison will experience great difficulty in maintaining morale amongst his officers and men many of whom are 16/17 year old conscripts. The Argentine military forces have not seen active service for over 110 years. They are in a foreign environment. Overall they may lack the experience needed to overcome inter alia the harsh weather, unsuitable equipment, poor accommodation and messing, water rationing, inadequate sanitation and hostile civilians. Morale of base troops around Stanley could well deteriorate quicker than those on out stations with more purposeful tasks. It may decline even further in the face of reverses such as ships sunk or the loss of South Georgia.

Naval Operations

49. The Argentine Navy could threaten the Task Force and provide naval gun fire support (NGS) to the Island Garrison. We have dealt with the limited offensive capability of the Argentine Navy earlier at paragraphs 5 - 10. Its capability for NGS is theoretically good but is reported to be rarely practised.

Air Operations

50. Offensive Support.

a. The Argentines will see offensive air support as a vital ingredient in their defence plans. Although they have over 100 aircraft with the necessary unre-fuelled range, their mainland bases are all at least least 400 nm away from Port Stanley. Thus only the 6 Canberras will be able to operate with their maximum bomb load. As their weapons effectiveness is low this will seriously handicap Argentine offensive support.

b. The scale of attack is difficult to forecast. In the first place it will depend on the number of aircraft the Argentines are prepared to commit. They will be looking over their shoulders at Chile and will need to keep some resources in reserve. On balance we believe the Argentines will take a chance and leave this task to their short range offensive aircraft, less perhaps 10 Pucaras which we consider they will deploy at Port Stanley for anti-helicopter and close support operation. They might also keep the 14 Mirage IIIs for air defence and thus have 85 tactical aircraft for offensive support.

c. If our earlier judgement on serviceability is correct this would give the Argentines 50 aircraft available and a total of 100 sorties during the first 24 hours for the defence of the Island. This might allow about 100 x 4000 lbs weapons to be delivered by tactical aircraft, plus a small addition for the Canberra.

d. The Argentines might increase this delivery rate slightly by staging their aircraft on return through the Port Stanley airport. However, this would not greatly affect the weapons load since only a limited number of aircraft could be handled by Port Stanley. Moreover, the aircraft would be highly vulnerable whilst on the ground unless air superiority were achieved.

51. Air Defence

a. When operating from the Mainland the Mirage III with its maximum radius of action of 670 nms, would only have some 30 minutes on Combat Air Patrol (CAP) over the Falkland Islands. The A4 and Mirage V which have no effective all weather capability, could not stay on CAP for significantly longer. With this performance it would be expensive in aircraft utilisation and operationally ineffective to attempt to protect the Island with air defence fighters from the mainland. The other option of using A4's and inflight refuelling looks equally unattractive. It would be better be base the Mirage on the airport.

b. However, the Mirage could not operate off the runway with its present length of 4,100 feet. Other limitations are the meagre fuel storage, the single access to the runway, the lack of approach aids and the restricted parking area although this is being extended. It is possible to extend this runway by up to 2000 feet and we believe the Argentines have the means to achieve this over the next two weeks or so.

The other limitations could be ameliorated and we believe the Argentines could operate up to 8 tactical aircraft from Port Stanley if improvements were carried out and there was an adequate stock-piling of essential consumables. Indeed, given the prevailing wind and a degree of risk full extension of the runway to the feasible 6000 feet may not be essential.

c. The deployment of the Mirage III is particularly attractive as it has a dual air defence/attack role. The A4, which is less demanding of runway length, and also has a dual capability albeit rather restricted, would be an alternati as would the Super ETENDARD if not carrierborne. Whatever the Argentines decide, and the choice is finely balanced, any aircraft on Port Stanley will be exposed and vulnerable. In any event we doubt whether the Argentines could maintain local air superiority.

STRENGTHS AND VULNERABILITIES

Strengths

52. The strengths of the Argentine position are:

a. Possession. They hold the Islands. Their determination and their confidence should be riding high. But their morale may already be undermined by the severity of local conditions and the threat of attack from the British Task Force.

b. Time. Although the British Maritime Exclusion Zone was imposed on 12 April, they can still reinforce and build up supplies by air at least until the Task Force arrives and can impose an air exclusion zone. During that time they may be able to monitor the progress of the

Task Force with some accuracy. The time of passage also still gives them the opportunity firstly, to pre-position their naval and air forces to best advantage; and secondly, to reinforce the Falkland Islands garrison, and prepare for any assault.

c. The Garrison. This is probably already in the order of an enlarged brigade group of 7,000 men, together with supporting weapons and could be increased by air at least until the Task Force reaches the theatre of operations. It will prove difficult to dislodge.

d. Air Power. The Argentine could launch a significant number of offensive sorties against the Task Force in daylight and good weather but their effectiveness would be limited. The deployment of the Pucara, and possibly tactical aircraft, at Port Stanley will increase the Argentines capability to resist a landing and provide limited air defence.

e. The Civil Population. The Argentines hold the British population and may well be able to exploit their presence to deter any assault on the key military objectives, which coincide with the concentrations of population. They would be unwise to allow the civilian population either to disperse out of Stanley or leave the islands since they may be valuable hostages.

Vulnerabilities

53. There are, however, weaknesses namely:

a. Navy. Their Navy cannot match the RN forces which will be deployed. It is especially vulnerable to the SSN attack. It lacks afloat support. Progressively, the Argentines will have difficulty in maintaining ships on station for protracted periods.

b. Air Defence. Their air defence intercept capability over Port Stanley is likely to be limited in good weather, and negligible at low level in poor weather and at night.

c. Inexperience of Joint Operations. The Argentine Armed Forces rarely work together thus they lack practical experience of joint operations. The art of producing a cohesive and effective defence plan may be beyond them. Their command and control arrangements are likely to be brittle.

d. Limited Reconnaissance. The Argentines are unable to maintain 24 hours reconnaissance close in to the Falklands. Their open ocean surveillance capability is limited. Thus, although we may not achieve strategic surprise, our chances of gaining tactical surprise for an assault are high.

e. Lines of Communication (L of C). The Argentine Garrison is wholy dependent upon its L of C with the mainland. The sea link is highly vulnerable to interdiction, yet they cannot affort to neglect it. Stanley airport is the jugular vein of the air link, and it is susceptible to attack once the Task Force comes within range.

CONCLUSIONS

54. We conclude that the Task Force is unlikely to be confronted by the Argentine Navy, which poses a moderate threat, before it reaches the vicinity of the Falkland Islands. The Task Force could be subject to air attack, particularly in daylight and clear weather when within 300 nm of the Falkland Islands, but the effectiveness of these attacks will be generally low.

55. We also conclude that there is only likely to be weak resistance to the repossession of South Georgia.

56. We further conclude that the main force of the Argentine garrison in the Falkland Islands will concentrate on Port Stanley and if their morale is sustained, they will be difficult to dislodge without endangering the civilian population.

57. We finally conclude that if the Argentines were to suffer a major reverse, or if the lines of communication to the Falkland Islands were severed their ability to sustain the defence of the Islands would be significantly eroded.

Annexes:

A. Assessment of Argentine Navy and Air Force.
B. The Argentine Army.
C. Airfields in the South of Argentina.
   Appendix 1 to Annex C - Argentine Air Force Order of Battle.
   Appendix 2 to Annex C - Argentine Air Power - French Equipment.
   Appendix 3 to Annex C - Argentine Aircraft.
   Appendix 4 to Annex C - Aircraft Radius of Action.
D. Airfields in the Falkland Islands.
   Appendix 1 to Annex D - TPS 43F Radar Port Stanley.
E. Tigercat - Technical Details and Evasion Tactics.

ANNEX A TO
DCDS(I)/26
DATED 15 APRIL 1982

ASSESSMENT OF ARGENTINE NAVY AND NAVAL AIR FORCE

ANTI SURFACE WARFARE

1. The Argentine Navy regularly practices surface surveillance using their P-2E NEPTUNE aircraft and a search rate of 22,000 square miles per hour (30% of a NIMROD capability). Their surveillance may be linked, if not initially triggered, by HF/DF sites. Long range surface surveillance could also be conducted by the CVA embarked S-2E TRACKER aircraft or visually by shore based aircraft. ESM will be used by their frigates their Type 42s and by their submarines (whilst surfaced). The CVA has a particularly good ECM/ESM fit; its operational effectiveness is not known by us.

2. Their best ASVW system is the two TYPE 209 diesel submarines if pre-positioned for force intercept; however the requirement for a dual ASW/ASVW role may limit salvo size. The German SST 4 torpedo is carried, with a range of 12/13/6.5 nm at 18/25/35 knots and an impact fuse. Fifty day patrols have been reported and screen penetrations has been successful in exercises.

3. MM38 EXOCET is widely fitted in 4 ex-US destroyers, 3 Type A 69 frigates, the cruiser and in both Type 42 destroyers. This system is rugged and simple from the operators point of view and a better than 50% availability should be expected. With the limited missile range (23NM) and the difficulties of "over the horizon targeting", active radar would provide the surest means of targeting. The Argentines are not believed to have fired more than one EXOCET and may well experience difficulty in co-ordinating missile firings and gunnery. A total of 40 (max) missiles is considered their stock.

4. The SEADART system fitted to the 2 Type 42 destroyers is horizon limited to a range of about 18NM and has never been fired by the Argentines in the surface mode.

5. The use of attack aircraft in iron bomb attacks is probable although unlikely at night. Some air launched AM 39 EXOCETS have been purchased, but may not yet be operational. Five Super Etendards could be fitted with this missile by the end of April. They are not believed to have ARMs. The Air Force could provide a limited ASVW capability with its A-4B/C and CANBERRA aircraft but effective co-ordination of air operations is doubtful. Close range ASM operations using 5 naval ALOUETTE helicopters with AS-11/12 missiles could possibly be conducted. The state of training and co-ordination of these operations is likely to be of low quality.

ANTI AIR WARFARE

6. The primary Argentine naval AAW weapon system would be the SUPER ETENDARD of which at least 5 have been delivered. These probably cannot be operated from the CVA, whose catapult and arrester gear are reported to be inadequate. SKYHAWKS could provide a limited AAW capability with AIM-9 AAMs but would require excellent fighter direction which is probably limited due to air search radar maintenance problems. The SEADART system on the Type 42s has never been fired since arrival in Argentina and on the SANTISIMA TRINIDAD is believed to have been ineffective since building due to MK 19 gyro instability; the two ships with this system have a magazine capacity of 22 missiles each - no reloads are available from ashore. It is

not known how may serviceable missiles of which Batch are on board, HERCULES can fire only Batch 1, of which only 18 are believed to be available.

7. Air search radars, with the exception of the possible LWOs in the CVA and Type 965 and Type 992 in the Type 42's, are old and are reportedly ineffective. Fire control radars on the old ex-US ships do not have an ECCM capability and are reported to be suffering from maintenance problems. Detection ranges on the Sea Harrier are assessed at a maximum of 80 miles but this will reduce to horizon range (9 - 12 miles) when the Harrier is at low altitudes. Chaff is used extensively, especially from aircraft.

8. Point defence on all ships would mainly be gunfire and Seacat on the Cruiser; this capability is restricted by obsolescent systems and, on the CVA, restricted to hand powered 40mm guns. Deployment of hand held BLOWPIPE SAMs is possible but would be limited to daylight operations only in low sea states.

9. Therefore, unless the SEADART systems are serviceable, AA defence is limited to guns.

NAVAL GUNFIRE SUPPORT

10. The single 6" gun cruiser is now believed to be at sea.

11. The Argentines have at least 33 guns of 100mm or greater with a NGS capability; the ex-US destroyers are most likely to be used in this role due to their large magazine capacity 12. Effectiveness in NGS would be dependent upon the training and exercises which have been held. The condition of fire control systems and turret alignment is unknown but is unlikely to be accurate.

ANNEX A TO
DCDS(I)/26
DATED 15 APRIL 1982
(Continued)

EMBARKED AIRCRAFT CAPABILITIES

13. A-4Q Skyhawk. Capable of 600 kts but normal attack speed 450 kts. Main offensive armament is iron bombs but it could probably only launch from the carrier with 4,000 lbs; rocket pods may also be available. Defensive armament is the AIM - 9A/B Sidewinder (but only 2 missiles per aircraft are carried) and 2 x 20 mm cannon. The aircraft does not have a modern nav/attack system and would be ineffective at night or in poor weather. The aircraft has a good low level performance and is highly manoeverable. The Sea Harrier should be able to outfight this aircraft.

14. S-2E Tracker. Sonobuoy and MAD capable. No details available on state of the system but generally a poor ASW aircraft. Capable of four hours on task, 100 miles from base in ASW role.

15. SH-3D Sea King. Capable of 4 hours on task in ASW role. Probably has Mk 44 torpedo. Not as sophisticated as the RN Sea King and unlikely to perform effectively at night. Only 3 available.

Land Based Aircraft Capabilities

16. T-28 Trojan. No firm knowledge. Believed to be twin seat propellor driven trainer fitted with air to ground rocket rails.

17. Super Etendard. Transonic single seat attack fighter, optimised for low and medium altitude operations. It has a highly sophisticated and accurate Nav/attack system. Armament - 2 x 250 kg bombs and 4 x 400 kg bombs, Magic air-to-air missiles or rocket pods. 5 aircraft were reported to be fitting EXOCET AM 39 missiles and could be completed by late April.

18. P2E Neptune. A very old maritime reconnaissance ASW aircraft. No further details available regarding performance.

19. SA-330 Puma-Transport. Troop carrying helicopter. A wide range of armament can be carried but no details available on Argentinian fit. Max cruising speed 146 kts, can carry 16 troops. Maximum range at normal cruising speed 355 miles.

20. Alouette 3. Light helicopter with accommodation for pilot and 6 personnel. Max speed 113 kts. Max range 298 nm.

ANTI SUBMARINE WARFARE

21. The Argeninians do not often get the opportunity to exercise with high performance SSNs. They apparently consider their best ASW platforms to be the 2 x Type 209 submarines which have a limited broad band passive search capability with their sonar but are reported to be well and aggressively handled and difficult to detect; they carry SST4 and possibly US MK 37 Mod 0 torpedoes. Surface ship sonars are limited to the surface duct. The medium frequency Type 184M in the Type 42s is the most capable but requires constant and careful attention to achieve this capability. The ex-US sonars are obsolescent and would be of very limited use. The DUBA sonar in the Type A-69 frigates is also capable of medium-range operations.

22. The TRACKER and SEAKING aircraft are capable of JEZEBEL operations; this equipment is similar to that used by the UK but the aircraft on board processing equipment (which is unknown) determines their effectiveness - this equipment is unlikely to be as sophisticated as that used by the UK or US.

23. ASW torpedoes known to be in the Argentine inventory include the US MK 44 Mod 0 and MK 37; the MK 46 Mod 0 may also be held. Frigates and larger ships also have 375mm mortar (2200m range), Hedgehog (270m range) and depth charges. Aircraft would probably drop the UK MK 43 torpedo. The general assessment of their ASW capability against the UK threat is low.

MINE WARFARE

24. Information on Argentine mine stocks is very sparse. Both the UK and the US have supplied mines in the past; an Argentinian factory is reputed to be capable of manufacturing more. Both contact and influence mines could be available. The stock is probably numbered in hundreds, rather than thousands.

25. Minelaying could be from aircraft, surface ship and submarine, although not all types of mine could be laid by each of these platforms. We believe that only the GUPPY submarine is a potential mine-layer (at the expense of torpedo outfit) and not the Type 209.

26. The Argentines conduct an active MCM programme with their ex-RN MCM vessels, two of which have been converted to minehunters.

COMMAND AND CONTROL

27. With the exception of the two Type 42s, the Argentines have a varied collection of old communications equipment. The CVA and two type 42s are configured to link data by an updated Ferranti CAAIS but they are not believed to have the operational proficiency to make effective use of this capability.

28. They are not believed to have a secure voice capability; they use the US MK 10 IFF system, probably with their own codes. Integrated Air Force and Naval Air Force operations are not known to have taken place. Each of the armed forces is autonomous and little if any experience of joint operations is available to them. Control of exercises is vested in the individual arm's Commander in Chief and there has been no apparent co-operation or co-ordination.

SUSTAINABILITY OF OPERATIONS

29. The Argentine Navy is known to suffer from electronics maintenance difficulties. Also, after short periods at sea, ships require alongside maintenance with often diffcult to obtain spares requirements. The major surface units are believed to be RAS capable from their single large tanker (which is currently limited to 13 kts) although they normally refuel in port and at anchor. The CVA has sufficient aircraft fuel on board for four days maximum offensive operations. Stocks of fuel supplies are unknown, but are probably sufficient for short term operations. The Argentine merchant marine consists of about 200 general cargo, tanker, and passenger vessels, of over 1,000 tonnes, most under national control, available for national resupply purposes. The Argentine Navy does not have a centralised logistic control system which apparently multiplies individual ship supply problems. A-4 Skyhawk operational availability is running at about 40%.

30. The sophisticated modern equipment in the two Type 42s will present major sustainability problems; the SANTISIMA TRINIDAD is known to suffer from a MK19 gyro defect from building which will probably render both the gun and missile systems ineffective. Given the known maintenance problems of these systems and the inability of the Argentines to obtain spares, it is unlikely if more than one fire control channel is available between the two ships.

31. The old ex US cruiser is unlikely to be capable of serious surface action but is EXOCET fitted and also capable of NGS. She is known to have had machinery problems.

32. The Argentine Naval Force, given the low capacity of their only underway replenishment tanker, is unlikely to be able to sustain operations continuously at sea for longer than 3 - 4 days.

ANNEX A TO
DCDS(I)/26
DATED 15 APRIL 1982
(Continued)

THE ARGENTINE NAVY

AIRCRAFT CARRIER (ex COLOSSUS Class) VEINTICINCO DE MAYO	- 37 years old. Refitted 1969. Carrier Air Group of estimated 21 A/C. Usually comprising 11 Skyhawk, 6 Tracker, 4 Sea King. No other main armament. Speed 25 Knots max. Endurance: 12000 miles @ 14 knots 6200 miles @ 23 knots.
CRUISER (ex US BROOKLYN Class) GENERAL BELGRANO	- 44 years old. 15 x 6" MK 47 guns MER 30000[x] 8 x 5" MK 25 guns MER 15000[x] 2 x Quad Seacat launches - 70 missiles MER 5000[x] Unlikely to have surface capability with Seacat. Can carry 2 x unspecified Helo. Speed: estimated @ 15 knots. Fire control v. old and unlikely to cope with modern targets or against jamming. EXOCET has been reported.
GUIDED MISSILE DESTROYERS HERCULES, (always escorts carrier) SANTISIMA TRINIDAD (UK Type 42)	- Modern DLGs. Capability as for UK Type 42 but information suggests TRINIDAD Seadart system is suspect. Both carry 4 x EXOCET MM 38. Both have 2 Triple Mk 32 Torpedo tubes. Not known whether equipped with Mk 44 and possibly MK 46 Torpedoes. Speed: 30 knots. Endurance: 5000 miles @ 18 knots.
(ex SUMNER Class) SEGUI HIPOLITO BOUCHARD PIEDRA BUENA	- 38 years old. Armament as for FLETCHER Class but with twin 5" mountings. In addition 4 x EXOCET MM 38. Can carry a helicopter.
(ex GEARING Class) COMODORO PY	- 37 years old. 4 x EXOCET MM 38. 6 x 5" Mk 38 (twin mountings). Same ASW weapons as other destroyers PY has SQS 23F sonar. Can carry helicopter.
DESTROYERS - (ex US FLETCHER Class) ROSALES ALMIRANTE STORNI	- 39 years old. Basic gun armed destroyers with very old fire control. 4 x 5" Mk 38 MER 18000[x] 6 x 3" Mk 50 MER AA 4000[x] 4 x 21" Torpedo tubes MER 15000[x] 2 x Triple Mk 32 Torpedo tubes Hedgehog & DC. Endurance 6000 miles @ 15 Knots. Both ships reported non-operational.

COS TS6(1)

ANNEX A TO
DCDS(I)/26
DATED 15 APRIL 1982
(Continued)

FRIGATES (French Type A.69) DRUMMOND, GUERRICO, GRANVILLE	- Almost new. 2 x MM 38 EXOCET 1 x 100 MM GUN 2 x Triple Mk 32 Torpedo tubes Endurance 4500 nm @ 15 Knots.
PATROL CRAFT	- 7 of various types. Gun armed. Two are ex US Tugs. Two have 3 x 4" guns. Three are 40 MM gun armed ex US Auxiliary Ocean Tugs - good range.
SUBMARINES (209 Class-German built) SALTA SAN LUIS	- 1200 tons. Delivered 1974. 8 forward torpedo tubes, 6 reloads SST4 and MK 37 torpedoes. 10 kts surfaced. 20 kts max dived for short burst.
(ex US GUPPY) SANTA FE SANTIAGO DEL ESTERO	- 2000 tons. 6 forward torpedo tubes. Four aft. 14 reloads. 18 knots surfaced. 15 kts max dived for short burst. MK 16 and MK 37 torpedoes. SANTIAGO DEL ESTERO reported unfit for diving.
MINESWEEPERS/MINEHUNTERS	- 6 ex-British TON-Class (4 x MSC; 2 x MHC) Refitted in UK in 1968.
LIGHT FORCES	- 12 assorted German, Israeli, and US Types. The 2 Type TNC 45, INTREPIDA and INDOMINA have 1 x 76 mm @ 2 x 40 mm guns and could operate off the Falklands. Questionable whether two are GABRIEL fitted.
AMPHIBIOUS UNITS	
LANDING SHIP DOCK (ex US LSD 5) CANDIDO DE LASALA	- Range: 8000 miles @ 15 kts. Lift (troops) 18 Officers 182 troops
LANDING SHIP TANK (ex US LST 1044) CABO SAN PIO	- Range: 9500 @ 9 kts. Lift (troops) 18 Officers 116 troops
LANDING SHIP TANK (ex MOD US De Sota Country Class) CABO SAN ANTONIO	- Range: Not known. Lift (troops) 30 Officers 604 troops
4 ex US LCMs 8 ex US LCVPs 7? Argentinian LCVPs 15? LARCs	

COS TS6(1)

ANNEX A TO
DCDS(I)/26
DATED 15 APRIL 1982

(Concluded)

33. NAVAL AIR FORCE

Units	Type	Total	Principal Bases
3 Attack Sqns	*A-4Q Skyhawk	11	Commandante
	T-28A Trojan	5	Espora NAB
	Super Etendard	5	(Bahia Blanca)
1 ASW Sqn	S-2A Tracker	6	"
	*S-2E Tracker	6	"
1 Patrol Sqn	P-2E Neptune	3	"
1 Helicopter Sqn	Alouette 3	9	"
2 Helicopter Sqns	*SH-3B Sea King	3	"
	SA-330 Puma	2	"

* Embarked

ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 1982

THE ARGENTINE ARMY

STRENGTH AND DISPOSITIONS

1. The Army has a total strength of some 85,000; this is made up of a regular cadre of 20,000 officers and SNCOs and 65,000 one-year junior conscripts. Whilst annual discharges and inductions run from November to February, the more elite units recruit throughout the year in order to maintain overall readiness.

2. Mobilisation plans were practised during the 1978 Beagle Channel crisis when the Army was able to increase its strength to 115,000 by M+15 and to 250,000 by M+180.

3. The Army's combat elements are grouped into four Corps whose peacetime locations are shown at Appendix 1. Its tactical organisation is built round twelve brigades (two of which were not programmed to be at full strength until 1984-85). Tactics and organisation generally follow the US Army model with local variations. Brigade strengths vary from 3,100 (Airborne Infantry) to 4,500 (Infantry). The outline of the four Corps is at Appendix 2 - 5. About half the combat strength is based in the Capital and in the provinces of Buenos Aires and Entre Rios (ie in the NW). The remainder is dispersed along the borders with Chile and Brazil. The organisation of the Marines includes at least one brigade and is shown at Appendix 6.

4. The Airborne Infantry Brigade is based at Cordoba and is held in strategic reserve. It is made up of three Light Infantry Regiments (two are airborne), an artillery battalion and supporting arms.

5. The likely Argentine Force deployed in the Falkland Islands as at 14 Apr 82 is an enlarged 9 Inf Bde with total strength of between 6-7,000. Details are shown at Appendix 8.

6. Training is generally effective but the large proportion of one-year conscripts, with resultant turnover, limits the scope of training to company and platoon level; formation exercises are infrequent. Although the Army-wide standard of all arms training must therefore be assessed as at the best to be weak, elite units (eg airborne) probably maintain a higher standard. The Army's morale and national pride are good, but its effectiveness, particularly under testing conditions and after one or two reverses, must be open to question.

EQUIPMENT

7. The Army is equipped with a mixed collection of weapons and vehicles from the United States, Western Europe and some of local design and manufacture. Much of it has been bought since 1977. Supplies of modern equipment are, however, inadequate and shortages exist in field formations. We expect these inadequacies to be less pronounced in elite formations, but since Argentina has a requirement to maintain its defences along the border with Chile, we believe that only a portion of the new equipment will be allocated to the Falkland Islands. Major equipment holdings and capabilities, where known, are at Appendix 7 and Technical data sheets with photographs have been prepared for most equipment.

8. Armour. The Argentines have a mix of very old and very new tanks, from the ancient but still serviceable Shermans to the modern and efficient TAM tanks. Many of their tank guns are of 105 mm calibre and as such pose a valid threat. However, the majority are considered light by modern definition.

9. Artillery and Air Defence. We believe that only a portion of Argentine sophisticated artillery will be deployed in the Falkland Islands for the reason given in para 7 above, however, the country does possess a large number of locally made modern 155 mm towed guns and some MRL which would be effective against Naval assault craft. The marines and army each have 3 Tigercat fire units and 209 missiles complete with fuses have been supplied for the combined Tigercat/Seacat defences. There are 20 Blowpipe aiming units and 120 Blowpipe Missiles. Twenty operators were assessed as 'average' during training by Shorts. Blowpipe may also be used against light armour. Most air defence is provided by Bofors and Oerlikon and there is evidence that a small number of Air Defence fire control radars may be held.

10. Anti Armour Weapons. The Argentines are known to have several ATGW systems including SS 11, SS 12, MAMBA, BANTAM, COBRA and possibly HOT. These weapons can be used effectively against ships and helicopters. Several types of recoilless anti-tank weapons are known to be held including 75 mm, 90 mm and 105 mm as well as short range 89 mm rocket launchers. It is not known whether they have LAW.

11. Engineer Equipment. The support of the invasion force will demand large tonnages of engineer support stores, labour and plant and it must be assumed they possess A/TK and A/pers mines. There is, however, no indication that non metallic or other unconventional mines are held.

ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 1982
(Concluded)

12. NBC Warfare. The Argentines have no nuclear capability and they have not been sold chemical or biological agents. They are nevertheless likely to possess riot control agents as they have a sophisticated chemical industry and so the production of lethal agents is just a possibility.

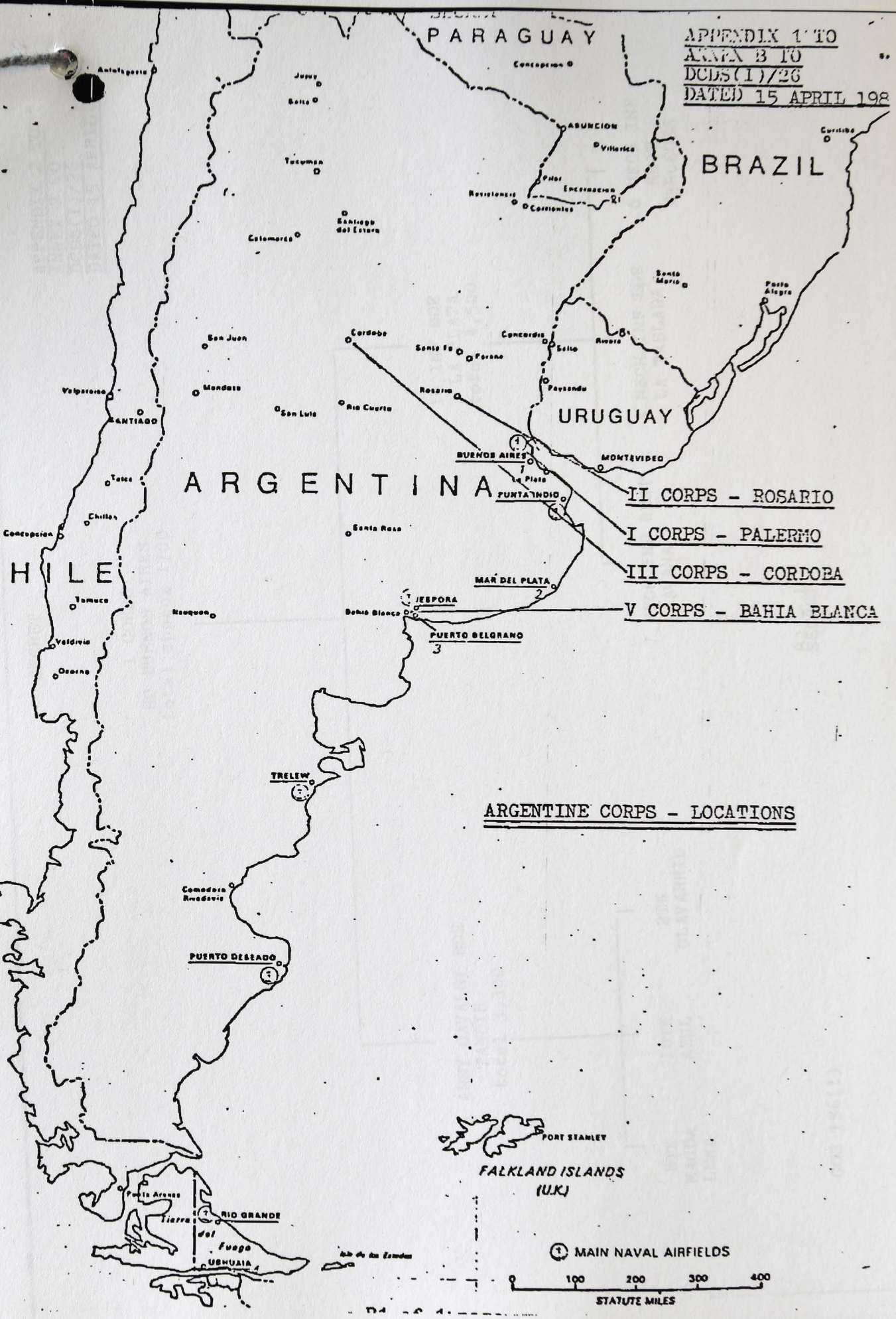
13. STANOC. Thermal imagers are not in the possession of Argentine forces but they do have active IR and some image intensification devices. Performance of the latter is unlikely to be better than scorpion sights but may be comparable.

14. Electronic Warfare. A significant Electronic Warfare (EW) capability is known to exist. Direction finding (DG) equipment was seen landing with the invasion force, HF and VHF jamming equipment is also available.

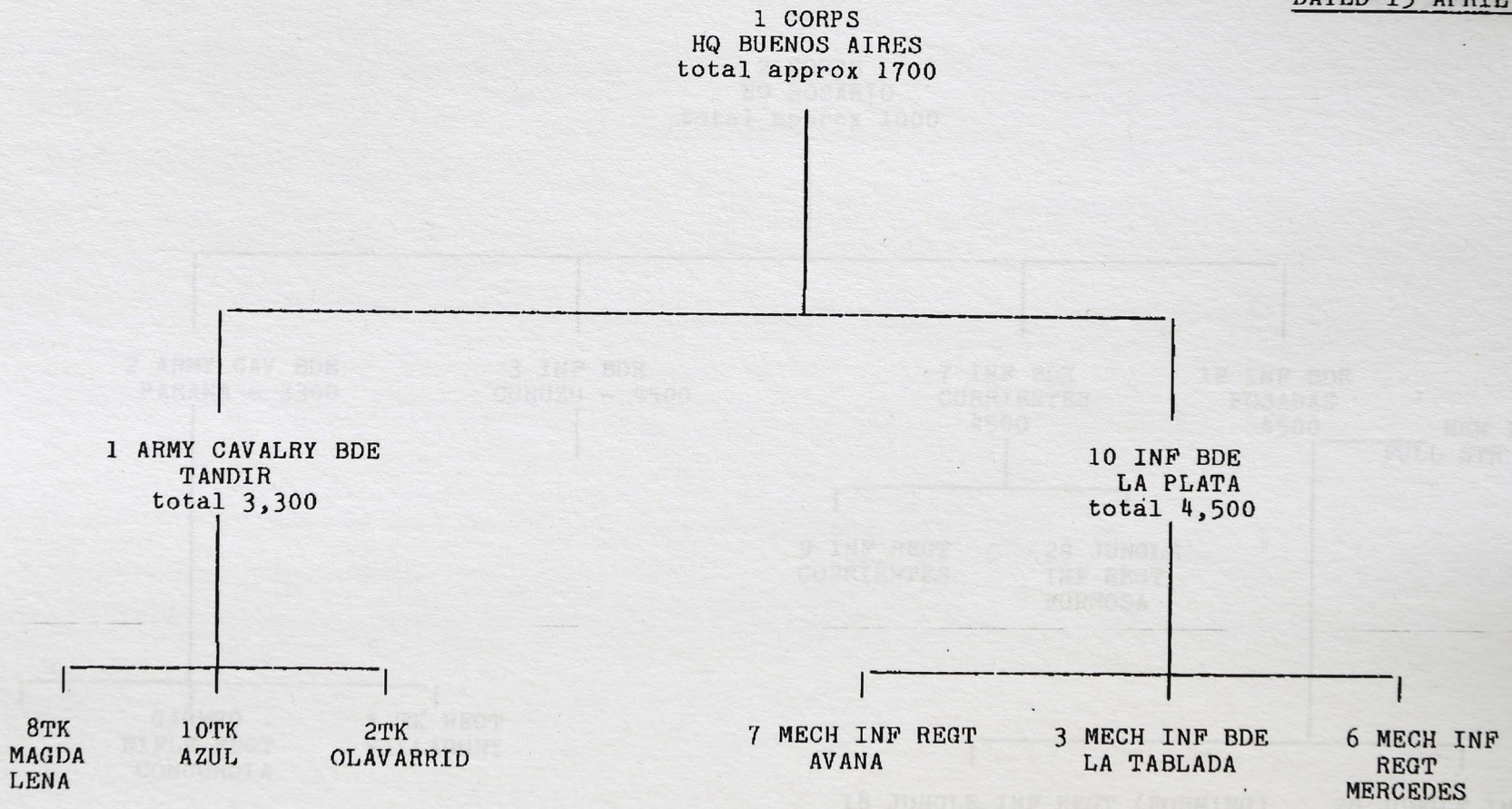
LOGISTICS

15. The Beagle Channel crisis in 1978 disclosed weaknesses in the logistic system. The movement of large numbers of troops, ration resupply and coordination between all 3 services were particularly weak. Although lessons may have been learnt since 1978, the Army's logistic capability in full scale operations is probably still one of its weakest aspects. It should, however, be able to mount limited operations at a place and time of its own choosing.

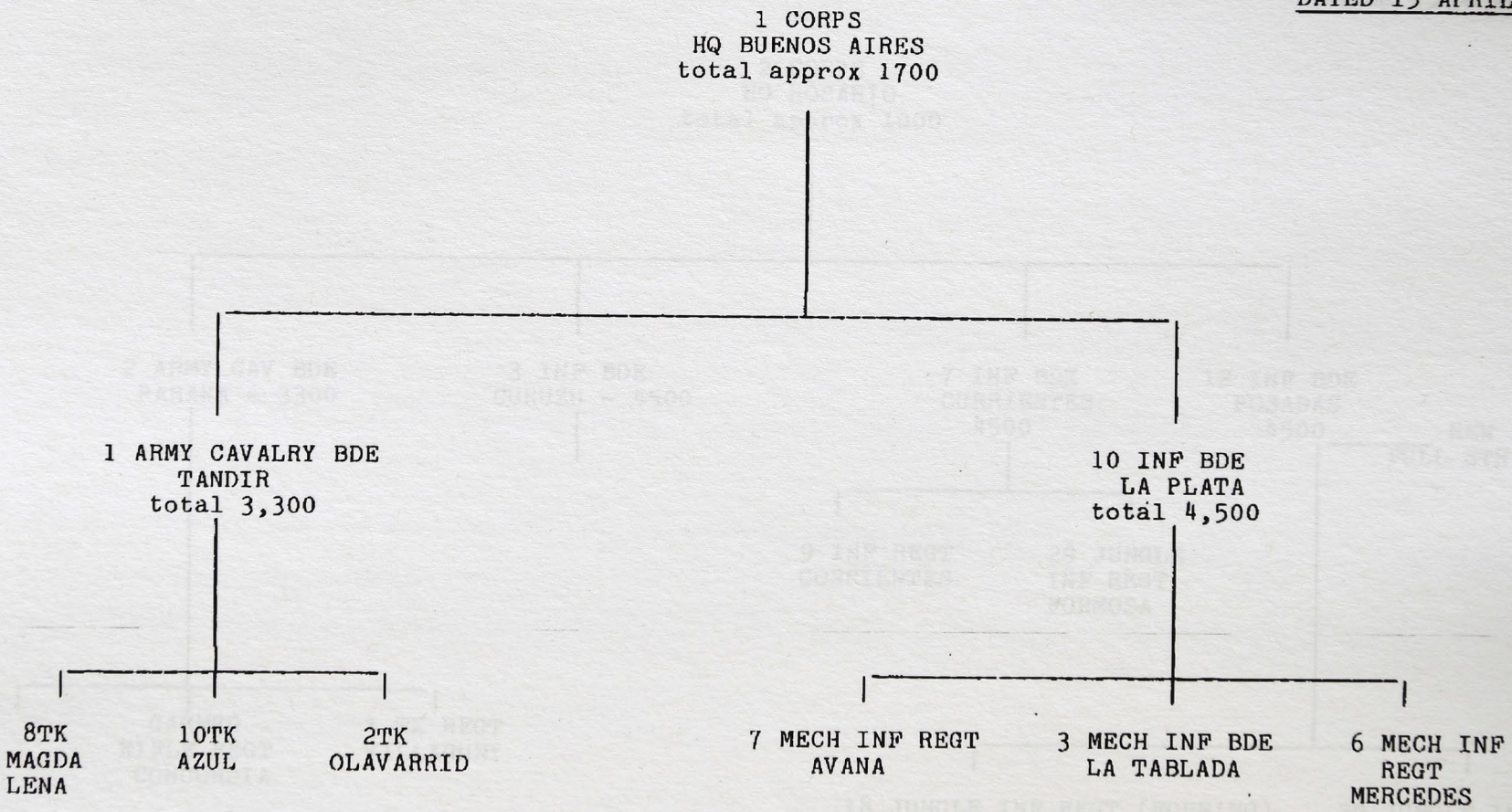
APPENDIX 1 TO
ANNX B TO
DCDS(I)/26
DATED 15 APRIL 198



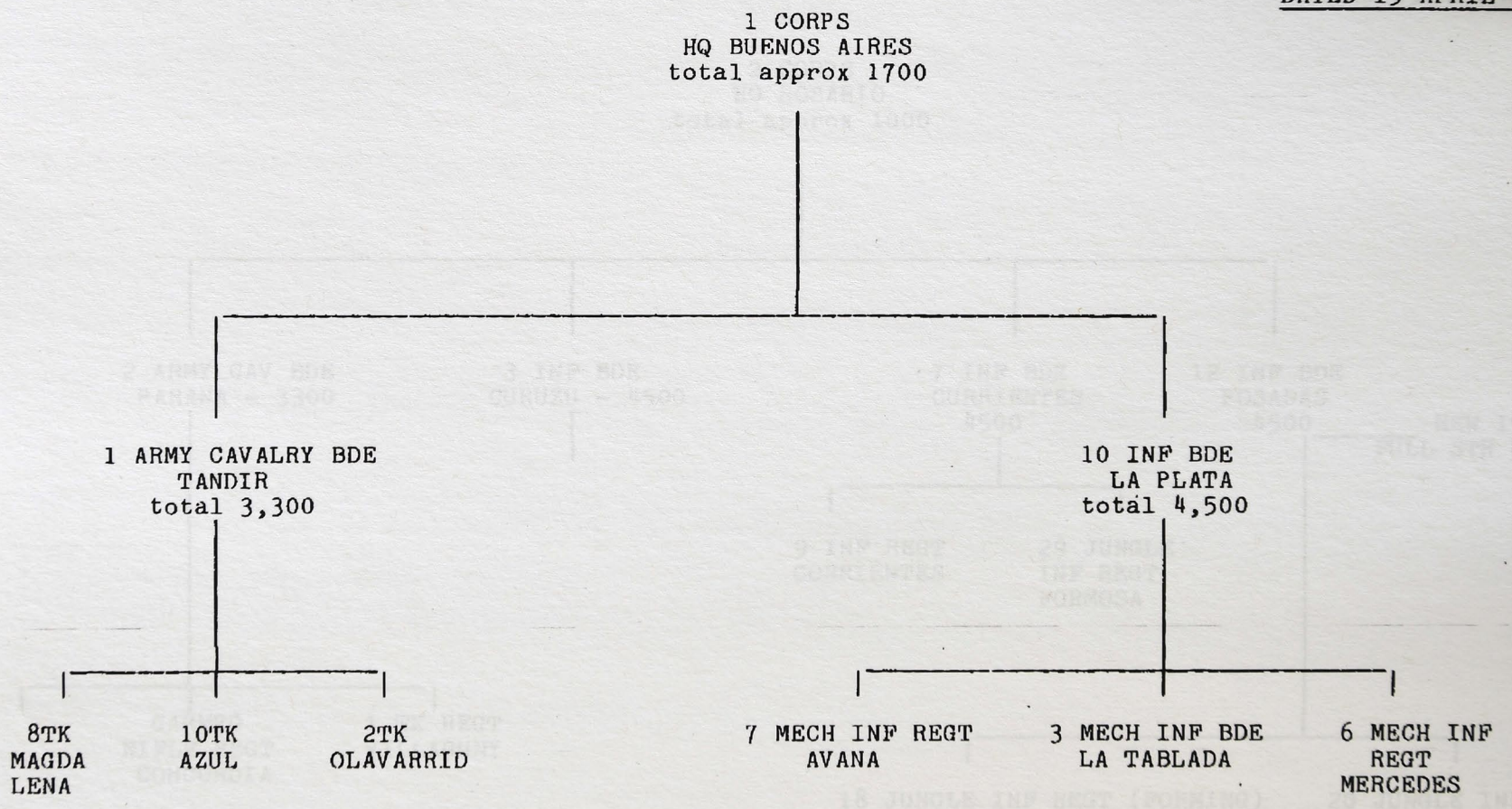
APPENDIX 2 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 19



APPENDIX 2 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 19[illegible]

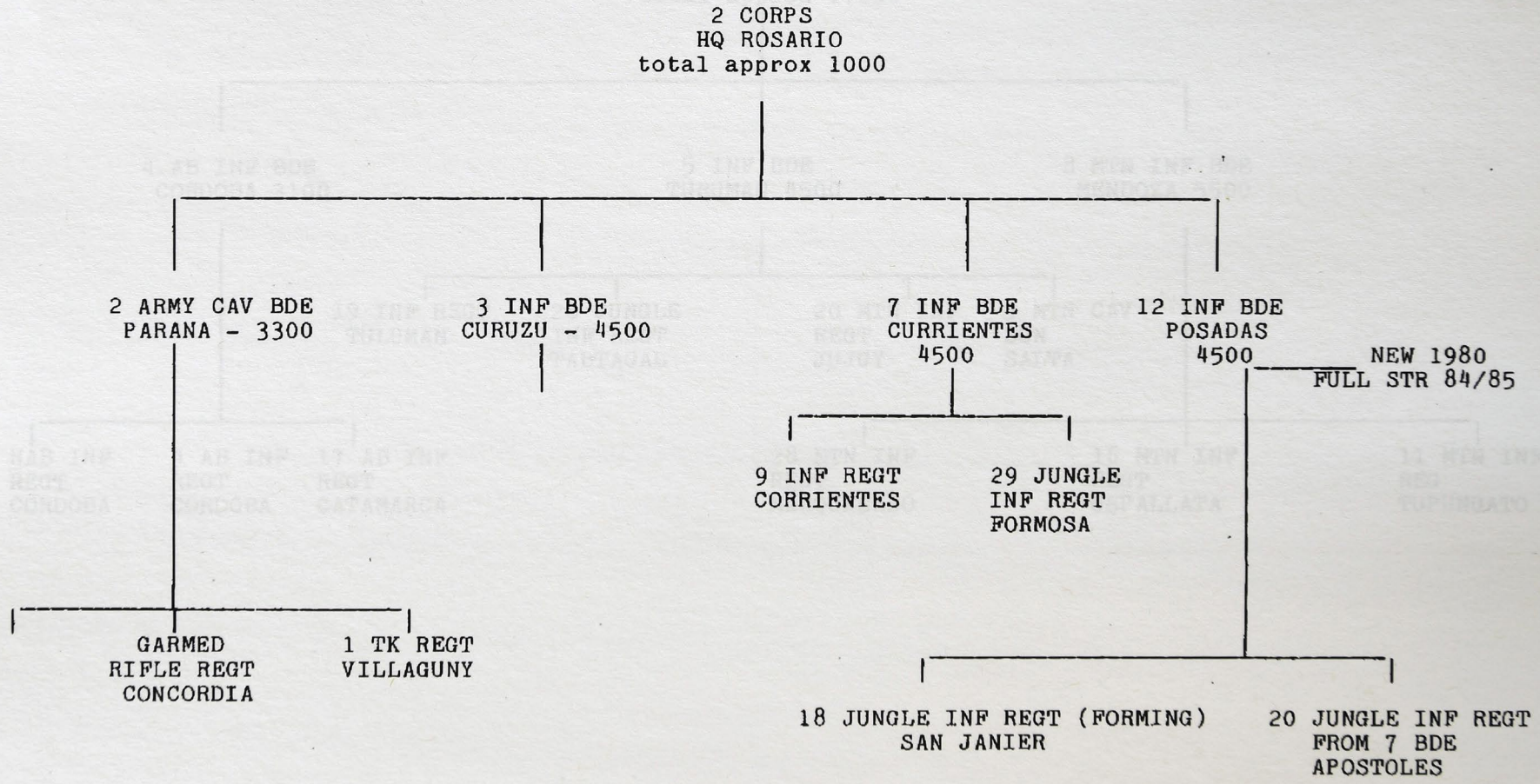


APPENDIX 2 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 19[illegible]



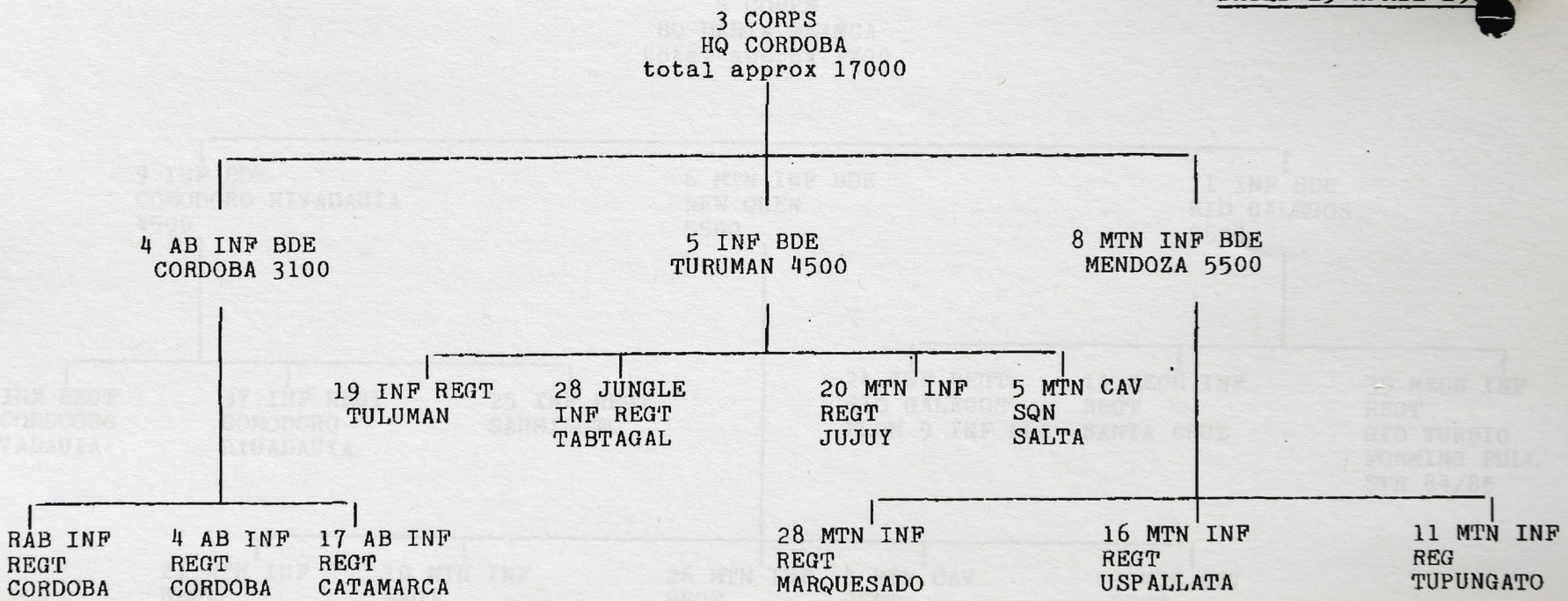
COS TS6(1)

APPENDIX 3 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 1982



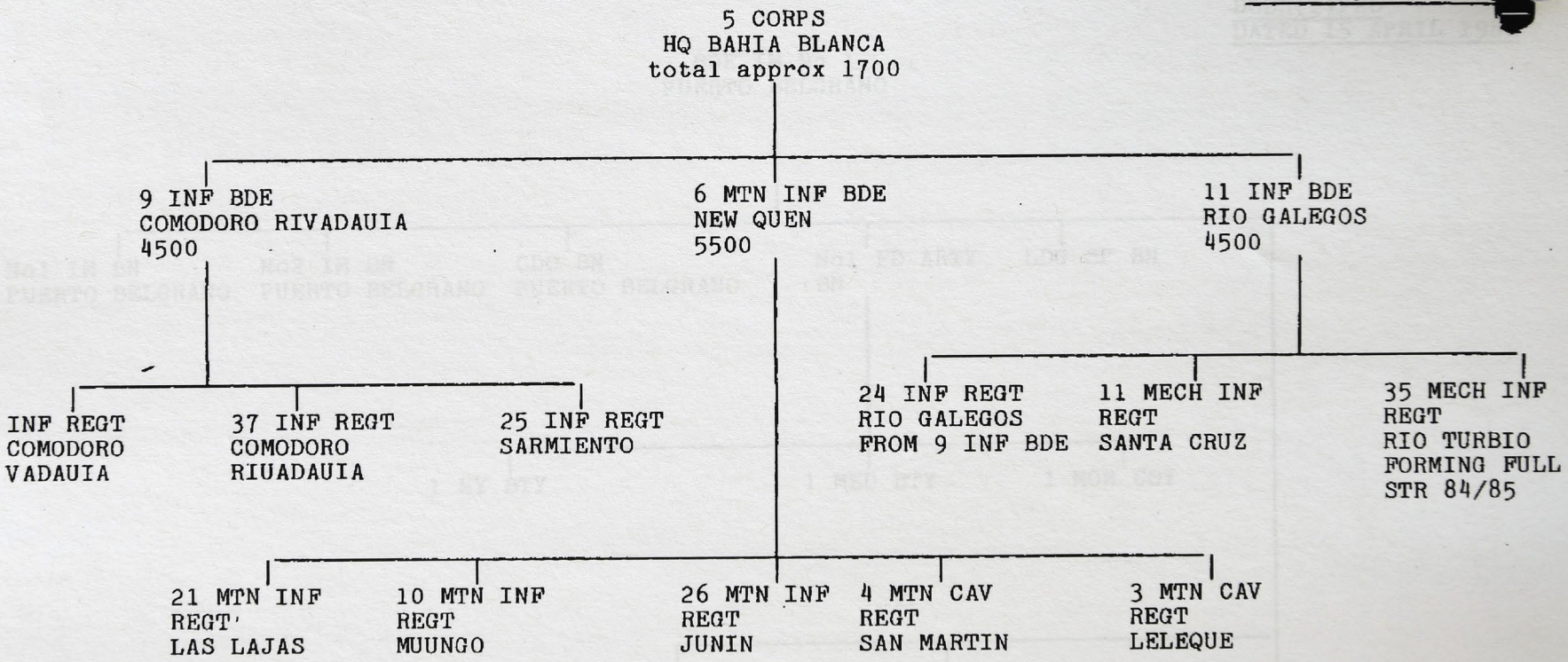
COS TS6(1)

APPENDIX 4 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 1982



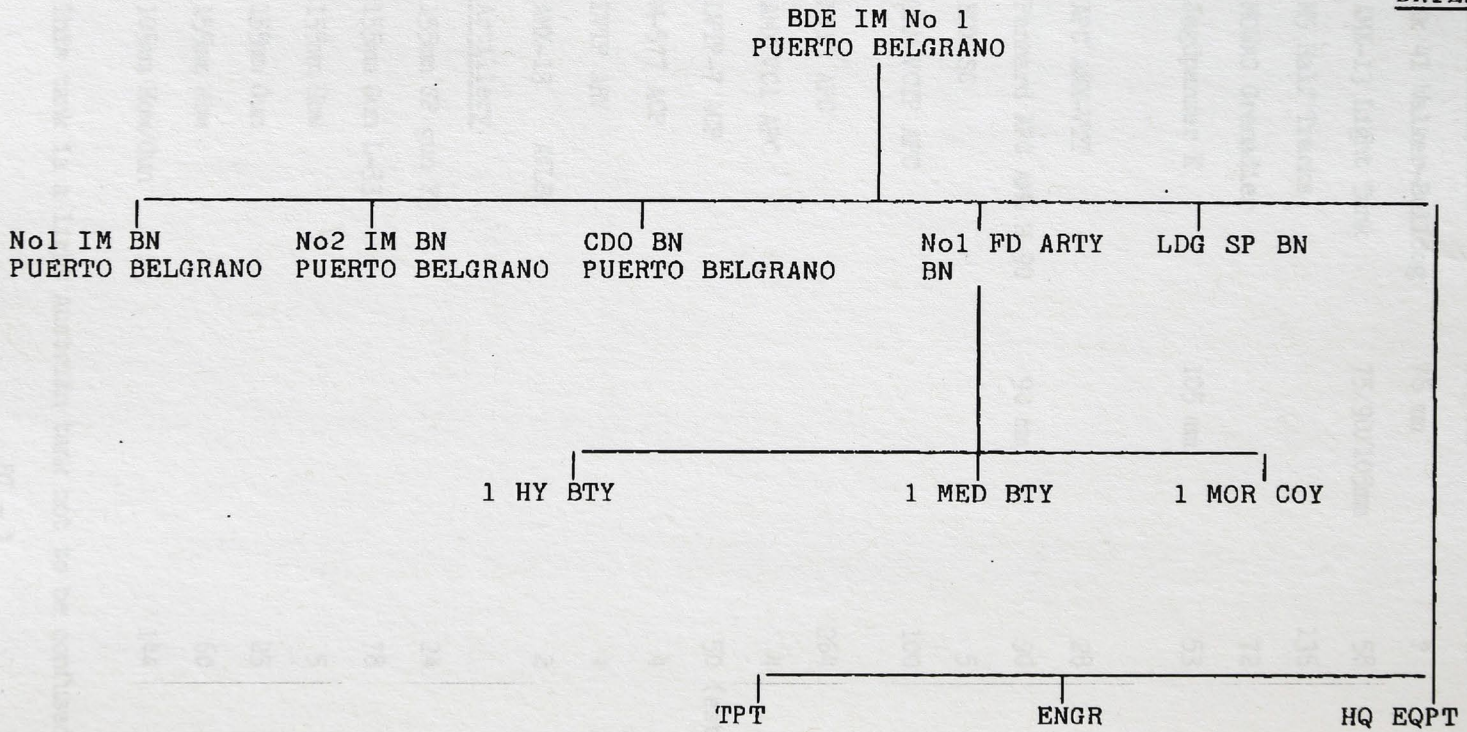
COS TS6(1)

APPENDIX 5 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 198



COS TS6(1)

APPENDIX 6 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 1982



COS TS6(1)

APPENDIX 7 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 1982

ARGENTINE ARMY EQUIPMENT

1. Armoured Vehicles

Type	Calibre	Quantity	Range	Remarks
Mk 4 Sherman	75/105 How/HVSS	100	1500m	2000m Static
TAM Medium Tank	105 mm	140	2000m	3000m
Mk 41 Walker-Bulldog	76 mm	?		
AMX-13 Light Tank	75/90/105mm	58		
M5 Half Tracks		136		
MOWAG Grenadier		72		
Jagdpanzer K	105 mm	53	2000m	7.62mm Turret Gun NOTE 1
APC AMX-VTT		28		
Panhard APC AML H-90	90 mm	90	2000m	Direct Fire
BDX SC		5		Belgian
TAM VCTP APC		100		20mm gun or mortar
M113 APC		264		
AMX VC1 APC		4		
LVTP-7 ACP		50 (estimated)		
M-577 ACP		4		
LVTP ARV		4		
AMX-13 AVLB		2		

2. Artillery

155mm SP gun F3	24
155mm Gun L-33	78
155mm How	5
155mm Gun	25
155mm How	60
105mm How/Gun	144

Note:
1. This tank is a light Austrian tank not to be confused with the German Panzerjager tank.

	Type	Calibre	Quantity	Range	Remarks
	105mm How		6		
	105mm Pack How R-56		90		Total 105 = 240
	75mm Bofors Gun L-40		260		
3.	AAA Guns				
	90mm AA gun		20		
	40mm AA gun L-70		6		
	40mm AA gun		16		
	40mm AA gun		80		
	35mm AA gun		6		
	30mm AA gun		36		
	20mm AA gun		240		Total AAA = 404
4.	AA missiles				
	Blowpipe		120		20 posts
	Tigercat		35		3 fire units no radar
	Roland 2		NK		Mtd on 'shelter' AFV unconfirmed
5.	Rockets and Recoilless Artillery				
	127mm Rocket (SAPBA)				
	105mm Rocket (Pampero)				
	105mm 90mm and 75mm recoilless				
	3.5 in Rocket Launcher				
	Blowpipe		120		20 posts
	Tigercat		35		2 fire posts no radar
	Roland 2		NK		Mtd on 'shelter' unconfirmed

	Type	Quantity	Remarks
6.	ATGW		
	SS 11	NK	
	SS 12	NK	
	HOT	1000 (unconfirmed)	
	BANTAM	NK	
	MAMBA	NK	
	COBRA	50 launchers	
7.	Mortars		
	120mm Brand	117	
	120mm LR Mortar	57	
	81mm Mortar	551	
	81mm Brandt	NK	
	81mm L Mortar	NK	Argentine produced
8.	Army Aviation		
	Bell OH-130	4	Light Helicopter
	UK-12	4	Light Helicopter
	UH-1H	22	Utility: some armed (rockets and MG) 1 lost
	Bell 212	1	Utility
	Puma	8	1 lost
	SA-415B LAMA	12	Utility Helicopter
	AB-109	9	Armed Helicopter
	CH-47c	2	Medium lift Helicopter
9.	Communications		
	VRC-321	100	UK HF radio vehicle set
	VRC-322	73	UK HF radio vehicle set
	TRC-300	482	HF manpack
	HF Transmitter	10	UK
	VHF 4600 & 3600	NK	Phillips VHF manpack and vehicle sets

Type	Quantity	Remarks
GROUNDSAT (VHF Single frequency reroadcast system)	4	Compatible with VHF 4600 and Phillips VHF 3600
SEM 192 (SEL)	NK	Probably fitted in TAM tank
COLLINS 719d-2A	NK	Probably fitted in TAM tank
DATOTEK Dx16	NK	Secure speech system probably fitted in TAM

10. Electronic Warfare

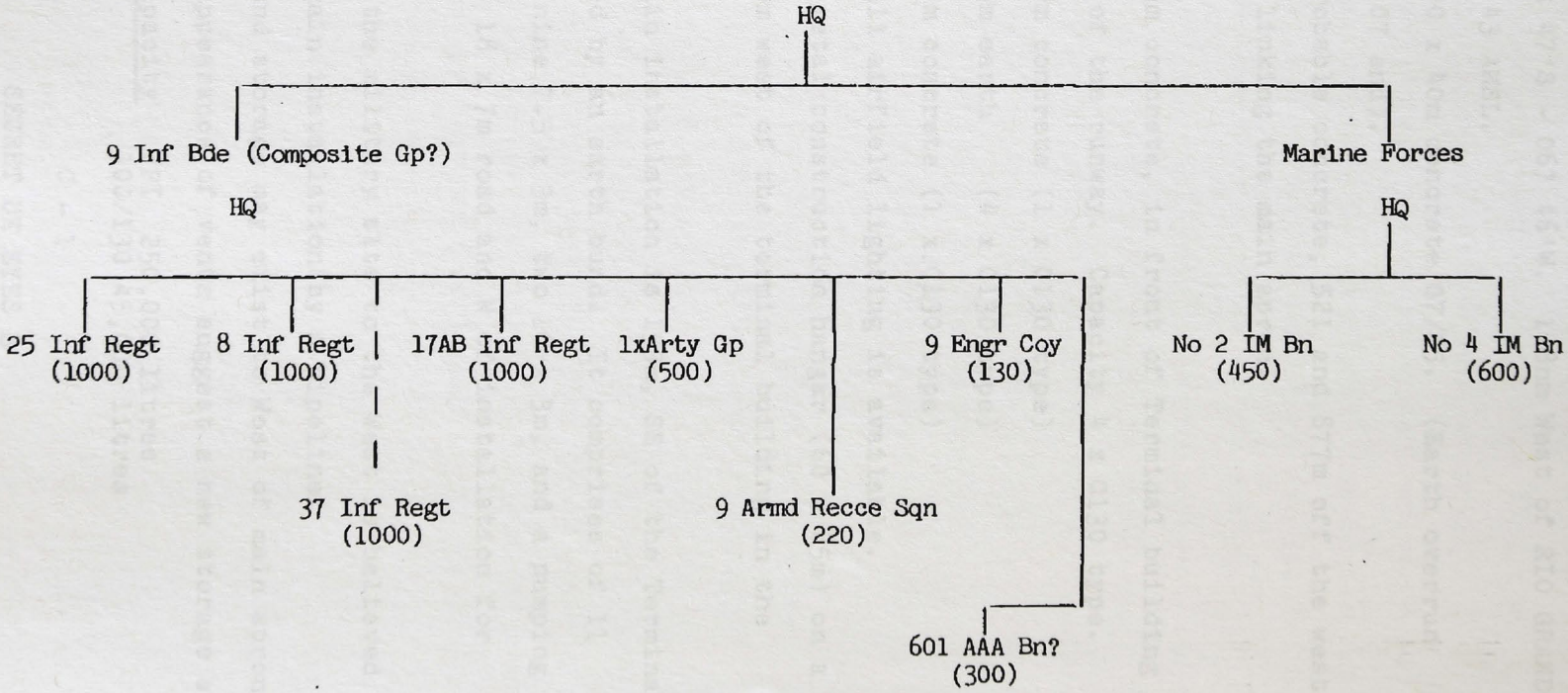
TELEGON 4 & 6	30+	HF/VHF, DF
SATT	NK	HF (10-30 MHS) Jammer
THOMPSON	NK	VHF JAMMER

APPENDIX 8 TO
ANNEX B TO
DCDS(I)/26
DATED 15 APRIL 1982

ARGENTINE GROUND FORCES
LIKELY ORBAT ON FALKLAND ISLANDS
AS AT 14 APRIL 1982

Joint Commander of Forces

General Osvaldo Garcia



ANNEX C TO
DCDS(I) 26
DATED 15 APRIL 1982

AIRFIELDS IN THE SOUTH OF ARGENTINA

RIO GRANDE (Military/Civil)

1. Location. 53 47'S - 067 46'W. 1.8nm West of RIO GRANDE city. Elevation: 43 AMSL.

2. Runway. 2,000 x 40m concrete 07/25. (Earth overrun of 318 x 49m from 07 end).

3. Taxiways. Probable concrete, 521 and 877m off the west end of the runway linking the main apron.

4. Aprons.

a. 135 x 85m concrete, in front of Terminal building to the south of the runway. Capacity 4 x C130 type.

b. 60 x 40m concrete (1 x C130 type)
200 x 45m earth (4 x C130 type)
34 x 37m concrete (1 x C130 type)

5. Lighting. Full airfield lighting is available.

6. Hangar. One metal construction hangar (60 x 65m) on a concrete base, 100m west of the terminal building in the military site.

7. Fuel. The main installation is 159m, SE of the Terminal Building surrounded by an earth bund. It comprises of 11 horizontal tanks, nine 7.5 x 3m, two 10 x 3m, and a pumping plant connected by 18 x 7m road and N of installation for bowser service.

Note: An area in the military site to the West is believed connected to the main installation by a pipeline.
Possible underground storage may exist to West of main apron; earth moving and appearance of vents suggest a new storage site.

Estimated Total Capacity JPI 250,000 litres
100/130 45,000 litres

8. Ammunition Storage. 14 magazines - 790m NW of Terminal Building opposite to Main Apron in a wire fenced area 320m square in circular form. Each of reinforced concrete 20 x 12m, earth covered containing ready loaded ammo vehicles.

9. Shelters and Revetments. There are no A/C shelters but 17 revetments could be used by A/C. Two types: one in the form of a U and the other a G. Four of the U type are located to the east end of R/W, remainer S and SW of R/W centre. 6 revetments in the S part believed to be for material storage.

10. Aircraft. No permanent establishment of fixed wing aircraft. However when the fleet deploys to S area this base has been used by A4Q, T34C and helicopters. It is also used as a staging airfield regularly by P2H Neptune and Aeromacchi 326 marine patrol A/C. Also used by F28, L118, B200 and C45 transport A/C.

11. AAA. None exists. Revetments for this purpose are located in the area. The 5th Marine Regiment is located nearby equipped with 40/70mm BOFORS.

12. Significance. A recently developed airfield much used by military and civil aircraft and likely to be of prime importance and firmly defended in time of war. Its destruction would deprive Naval Air Command of its most useful airfield for deployment in TIERRA DEL FUEGO.

COMODORO RIVADAVIA (Military/Civil)

13. Location. 45 47'S 06 72'W. Elevation: 141 ft. Located 6nm N of COMODORO RIVADAVIA city; 43.2 nm E of Lake COHLUE HUAPI N of railway line and main road. IXa Aerial Brigade base in peacetime. Joint Civil/Military airfield, alternative name General MOSCONI. Surrounded to W by chain of small peaks with an average height of 690m one of which has a red hazard warning light.

14. Runways. 2350 x 50m concrete 07/25.

970 x 40m earch 12/30 ISWL 15,000kg

Hard shoulders on both runways.

15. Taxiways and Aprons. 300 x 200m concrete apron connected to R/W by 300 x 20m concrete taxiway. This connects with a 400 x 20m link road joining Civil and Military aprons. Both have WBC of 35,000kg ISWL. R/W slopes, 07 end higher by 22m. Three parking aprons:

a. In front of Terminal Building on S side of R/W, 200 x 75m concrete, 3,5000kg ISWL, capacity 4 x Boeing 707 type. (Possible auxiliary asphalt apron adjoining to W).

b. 1X Aerial Brigade Apron. Concrete 400m to W of Civil Apron. Capacity 3 x 707s, 35,000kg ISWL.

16. Lighting. Full airfield lighting with dedicated generator requiring 10 minutes to become operational.

17. Buildings. Wide and modern. Terminal Buildings with full passenger facilities.

18. Fuel.

a. Civil. Avgas 91/96 and 100/130 in underground tanks immediately to W of civil apron. Capacity not known.

b. Military. Tank Farm in Military area:

10 x 12 x 2m horizontal tanks.

Note: 30m to E of this complex there are 2 vertical tanks belonging to Shell. Capacity not known. Refuelling by bowsers. 300m NW of 07 R/W there are 3 semi-buried tanks. Capacity not known.

19. Electricity. Mains supply.

20. Ammo Storage. Approx 500m NE of 25 R/W there are sited 4 magazines (no dimensions). 300m S of same R/W are sited small ready for use magazines, (no dimensions).

21. Shelters and Revetments.

a. 5 A/C shelters of reinforced concrete. Dimension and capacity not known. Located 300m N of R/W 25.

b. 2 revetments, camouflaged, are located 100m W of R/W 25.

22. Defences. Gun sites in airfield area.

23. Operating Capability. Could be used in time of war as a redeployment base for all types of aircraft given its standard of facilities.

24. Significance. This airport is the base of the XI Aerial Brigade whose peace time role is to provide logistic support to air operations in the Patagonian zone and serves as an en route airfield for flights to the extreme S. Its facilities permit permanent operation of up to two combat groups. Its destruction would deprive the Air Force of its most important logistic base in the S Zone.

RIO GALLEGOS AIRPORT

25. LOCATION.

51°37'S 069°.7'W Elevation 66ft 2.4 mm W of city of RIO GALLEGOS: 11 mm W of River Gallegos. Military/Civil Airport. Military Sector on N Side of R/W; Civil Sector on S. Constructed by AAF and opened 1 June 1967. The Runway stands out because of its' contrasting colour. The airport is flanked to the N by the R. Gallegos and to the S by the road RN3.

26. RUNWAY.

3,550 x 40m. Concrete, 200m each end surfaced with asphalt, 07/25. Capable of being used by all aircraft in service.

27. TAXIWAY AND APRONS.

a. Concrete taxiway, N/S, 300 x/Ohr, concrete, connects two groups of A/C shelters with near centre of R/W.

b. In June 1981 an asphalt road was constructed from the A/C shelter site to the Military Site in the NW area of airfield

c. A 320 x 25m concrete taxiway connects Civil Apron 110 x 100m (concrete) to the E in the Terminal Area to a Military Apron (about the same size in the W. of the Area). A 300 x 30m taxiway (probably concrete) joins the Terminal Area aprons to the R/W nears its centre.

28. Lighting. Full modern airfield lighting.

29. Power/Water. Electricity supply from Rio Gallegos city generators. Standby generator available. Water supply by aquaduct (mains?) from city.

30. Access. Rail 150m S of airfield; TURBIO/RIO GALLEGOS narrow gauge railway.

31. Domestic. Military Site in NW area of airfield contains Messes, large modern office and domestic accommodation, and water tower.

32. Hangars.

a. Air Force hangar within 45x35m apron near E end of R/W capable of parking 5 Marine Saulnier A/C.

b. Hangar 45 x 50m, metal roof and walls painted leaden colour used by Air Force about 500m W of E end of runway and connected to it.

33. Aircraft Shelters.

Two area. 130m N side of centre of R/W consisting of two groups in an arc NE through SW joined by taxiway to near R/W centre. Each group of 4 shelters (ie 8 shelters) at right angles to centre concrete hard standing.

Dimensions each 24 x 40m concrete wall and roof 60cm thick. Jet efflux exhaust at rear of each shelter. Each group has a concrete tunnel 50m long 2m high for personnel protection and storage and for access. Another group located 200m N of R/W and 300 NW of E end of R/W; number not clear but appears to be a group of 2 parallel shelters each approx 30 x 10m connected to R/W by a loop taxi way under construction June 1981.

34. Readiness Aprons. Two groups of two earth mounded readiness aprons off E end of R/W; connecting taxiway 200 x 7m.

35. Fuel. Two groups of tanks 180m SE of civil apron and about 200m S of Air Force apron!

a. 9 cylindrical horizontal tanks!
   7 x approx 10 x 2m
   2 x approx 15 x 25m
   then 70m S of this group
   3 x approx 10 x 2m
   1 x vertical tank 8 x 6m
   1 x cylindrical tank 10 x 2m
   2 x vertical tanks 5 x 5m

b. On SE side of first group;
   4 x vertical tanks 10 x 7m
   3 batches of 4 x cylindrical tanks (no dimensions)
   All above ground

Movement of JP1 and 100/130 carried out by Bowsers of YPF (Oil firm).

Estimated total capacity JP1 600,000 litres

100/130 100,000 litres

36. Aircraft. The base since October 1980 of fighter aircraft of IV, V, VI and VIII Aerial Brigades relieved every 20 days. Believed that the Air Force is to transform A/F into a new Brigade Base.

37. Air Defences.

a. Missiles. Not seen but Argentinians believed to possess ROLAND System.

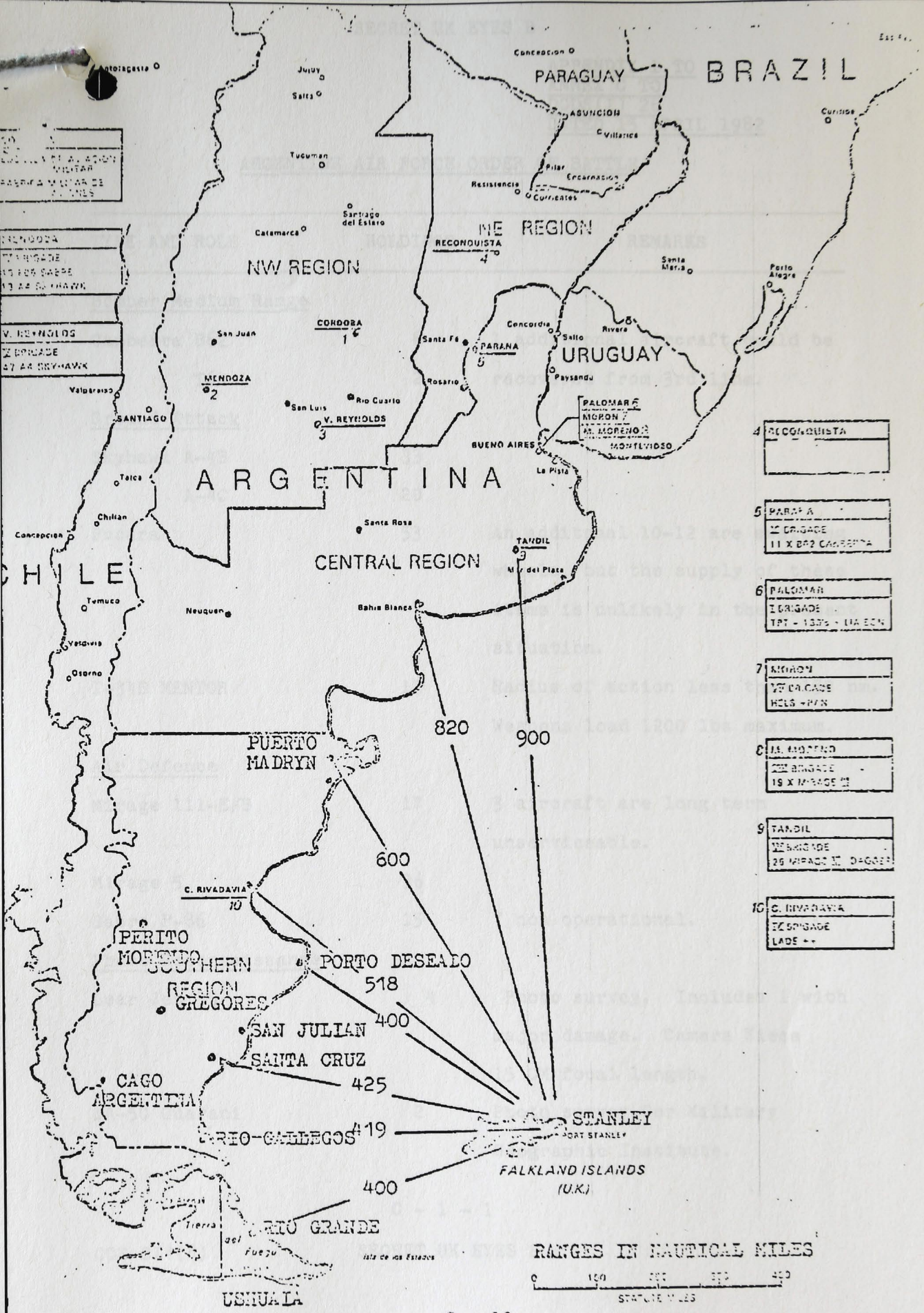
b. AAA. 210mm TCM-20 guns along N side of river in N part of airfield area 35m twin barrelled Oerlikons also held.

c. NB Dummy AAA equipment has been seen at A/F.

38. Significance. Destruction of this international airport would deprive Argentina of her most complete air base in the extreme S. of this country. It is capable of operating groups of combat aircraft.

AIRFIELDS IN ARGENTINA

NAME	COORDS	R/W (ft)	ELEV (ft)
GEN URQUIZA	31 47 44S 60 28 48W	688 x 147 Asphalt	243
DR MARAINO MORENO	34 33 42S 58 47 20W	7874 x 131 Asphalt	105
TANDIL	37 14 08S 59 13 44W	8366 x 157 Concrete	574
EL PLUMERILLO	32 49 55S 68 47 05W	9885 x 177 Concrete	2310
VILLA REYNOLDS	33 43 48S 65 23 08W	7545 x 164 Asphalt	1591
MORON	34 40 38S 58 38 36W	10334 x 131 Asphalt	98
EL PALOMAR	34 36 37S 58 36 42W	6910 x 164 Concrete	58
RECONQUISTA	29 11 30S 59 41 30W	6447 x 164 Concrete	157
GEN ENRIQUE MOSCONI	45 47 14S 67 27 46W	7710 x 164 Concrete	190
PUERTO DESEADO	47 44 09S 65 54 07W	4921 x 98 Asphalt	266
PUERTO DESEADO NAB	47 43 12S 65 55 31W	4800 x 110 Asphalt	271
RIO GALLEGOS	51 36 27S 69 19 28W	11647 x 136 Concrete	66
SANTA CRUZ	50 01 12S 68 35 00W	6562 x 98 Asphalt	371
RIO GRANDE	53 46 45S 67 45 00W	6561 x 130 Concrete	43
PUERTO MADRYN(CIV) Capable of landing C47	42 45 24S 65 05 47W	7283 x 262 Graded Earth	446
PUERTO MADRYN(NAV) Capable of landing C47	42 47 3S 65 01 04	4921 x 164 Graded Earth	230


PARAGUAY
BRAZIL
ARGENTINA
CHILE
URUGUAY
NW REGION
ME REGION
CENTRAL REGION
SOUTHERN REGION
RECONQUISTA
CORDOBA
MENDOZA
PARANA
V. REYNOLDS
PALOMAR
MORON
M. MORENO
TANDIL
C. RIVADAVIA
PUERTO MADRYN
PERITO MORENO
GREGORES
PORTO DESEADO
SAN JULIAN
SANTA CRUZ
CAGO ARGENTINO
RIO GALLEGOS
RIO GRANDE
USHUAIA
STANLEY
PORT STANLEY
FALKLAND ISLANDS (U.K.)
820
900
600
518
400
425
419
400
4 RECONQUISTA
5 PARANA
6 PALOMAR
7 MORON
8 M. MORENO
9 TANDIL
10 C. RIVADAVIA
RANGES IN NAUTICAL MILES
0 100 200 300 400
STATUTE MILES

APPENDIX 1 TO
ANNEX C TO
DCDS(I) 26
DATED 15 APRIL 1982

ARGENTINE AIR FORCE ORDER OF BATTLE

TYPE AND ROLE	HOLDINGS	REMARKS
Bomber Medium Range		
Canberra B62	6	1 additional aircraft could be recovered from 3rd line.
T64	2	
Ground Attack		
Skyhawk A-4B	33	
A-4C	20	
Pucara	53	An additonal 10-12 are awaiting wheels, but the supply of these items is unlikely in the present situation.
T-34B MENTOR	17	Radius of action less than 150 nm. Weapons load 1200 lbs maximum.
Air Defence		
Mirage 111-E/B	17	3 aircraft are long term unserviceable.
Mirage 5	36	
Sabre F-86	15	7 non operational.
Photo Reconnaissance		
Lear Jet 35	4	Photo survey. Includes 1 with major damage. Camera Ziess 15 CM focal length.
1A-50 Guarani	2	Photo survey for Military Geographic Institute.

TYPE AND ROLE	HOLDINGS	REMARKS
Air Refuelling		
KC-130	2	
Transport Medium Range		
C-130 E/H	7	Includes 1 severely damaged; probably long term unserviceable.
1A-50 Guarani	12	15 Pax, maximum payload 3300 lbs Range with max payload 1076nm.
Personnel Transport		
Boeing 707 320-B	3	
F-28	5	One is President's aircraft
F-27	13	
T-39 Sabreliner	1	VIP transport
DHC-6 Twin Otter	6	
Helicopter - Light Attack		
Hughes 500 MD	14	
Helicopter - Utility		
UH-1H Iroquois	5	
Helicopter Reconnaissance		
S-61N	1	
S-58T	2	
Bell 212	7	

TYPE AND ROLE	HOLDINGS	REMARKS
Training		
MS-760 Paris	37	
T-34B Mentor	32	
Utility		
1A-50 Guarani	4	
Cessna 182	13	
Aero Commander 500U	7	
Search and Rescue		
Merlin IVA	2	
HU-16B Albatross	3	
S-61R	1	
SA 315B LAMA	5	
Army Helicopters		
PUMA	8	
UH1H (Bell 205)	22	
UH9N (Bell 212)	1	
A 109	9	
SA.315 LAMA	12	
CH-47C (CHINOOK)	2	
Navy Helicopters		
ALOUETTE III (SA 319B)	9	
PUMA	2	
LYNX	2	
SEAKING	4	

APPENDIX 2 TO
ANNEX C TO
DCDS(I) 26
DATED 15 APRIL 1982

ARGENTINE AIR POWER - FRENCH EQUIPMENT (AS AT 9 APRIL 1982)

1. AIRCRAFT.

Mirage III	- 17	- But 3 under long-term major repair.
Super Etendard	- 5	
Nesher (Israeli Mirage 5)	- 36	

2. HELICOPTERS.

Alouette 3	- 14	
Puma	- 9	
Lama	- 12	

3. MISSILES

AS 11	- 150	
AS 12	- 110	
Roland	- 2	TEL's (1 fully operational, 1 optical only)
	- 60	missiles
Exocet AM39	- 5	
MATRA R530 AAM	- 21	(15 radar, 6 IR for Mirage III)
MATRA R550 AAM	- 48	(20 for Super Etendard, 28 for Mirage III, probably not operational).

4. BOMBS.

250 kg	- 165	Ballistic, 165 Retarded
400 kg	- 95	Ballistic, 1909 Retarded

APPENDIX 3 TO
ANNEX D TO
DCDS(I) 26
DATED 14 APRIL 1982

A4 SKYHAWK

Background

1. The A-4 Skyhawk is an ageing lightweight attack aircraft developed for the USN in the 1950's. It has also had distinguished service with the Israeli Air Force. The AAF has two versions of the Skyhawk, the A-4B and A-4C; the C variant differs from the B by being equipped with a search radar. The aircraft have been in the AAF inventory since the 1960's. The Navy also operate the A-4.

Nav Attack System

2. The basic A-4B is equipped with a dead reckoning computor VOR and Tacan. It has a low altitude bombing capability. It has no EW equipment and is assessed as having no night/all weather capability. The navigation system of most aircraft has been recently improved by the fitment of Omega.

3. The A-4C has a search radar and a doppler navigator in addition to the basic fit in the A-4B, it has probably also been retro fitted with Omega. It is assessed as having a limited night/all weather capability.

WEAPONS

4. The Skyhawk is fitted with 2 x 20mm cannons and with a capacity of 100 rounds and can carry a wide range of weapons - notably 500 and 1000 lb bombs, AIM-9J, Sidewinder, Shafrir and possibly Matra AAM.

RANGE

5. The radius of action figures quoted below can be enhanced by air to air refuelling from KC-130 tankers or by buddy buddy refuelling from other A-4's:

a. Close support 2 ext tanks 2000 lbs store - 530 nm

b. Hi-Lo-Hi 2 ext tanks 2000 lbs store - 620 nm

(30 minutes at low level)

c. Operating from the aircraft carrier with 2000 lbs stores (HI-LO-HI) - 620 nm

Note: Take-off roll for a and b 4800 ft.

1A 58A Pucara

6. The Pucara is an Argentinian twin-turboprop counter insurgency aircraft. It is a simple VMC aircraft capable of operation from short semi-prepared strips of about 1000' in length. The AAF operates about 50.

7. Basic Description. The Pucara is an all-metal low wing monoplane. Operating weight is around 6 tons and cruising speed around 240 kts. The windowscreen is bullet proof and the cabin floor and some vulnerable areas are armoured against small calibre rounds. There are 3 hardpoints; the under fuselage point stressed to 2000 lbs and the 2 under-wing stations to 1000 lbs each.

8. Radii of Action.

a. All low - weapon load 1500 lbs - 270 nm
- weapon load 2500 lbs - 190 nm
- weapon load 3300 lbs - 140 nm

b. A High-low-high - weapon load 1500 lbs - 380 nm
- weapon load 2500 lbs - 320 nm
- weapon load 3300 lbs - 230 nm

9. Avionics. A basic avionics fit including VOR, ILS, radio compass, VHF and HF communications. IFF may be fitted.

Armament

a. Internal. 4 x 7.62mm machine guns with 900 rounds per gun and 2 x 20mm cannon with 270 rounds per gun.

b. External. Typical loads are unknown but manufacturers data shows various ballistic and retarded bombs, napalm, 2.75" rockets and podded cannon and machine guns.

Super Etendard

10. The Super Etendard is a French development of the Etendard carrier aircraft which entered service in 1962. Fourteen aircraft were ordered by ARGENTINA in 1979: 5 have been delivered to date. It is assessed that carrier operations are theoretically possible, but there is no evidence of any training for this.

a. Avionics. The aircraft is fitted with a comprehensive integrated avionics system. The fit includes:

(1) Inertial Navigation System. A Sagem/Kearfott SK 2602 digital inertial navigation system with an assessed drift rate of 1 nm/hr.

(2) Multipurpose Radar. The AGAVE lightweight I band pulse radar can be used for sea surveillance, attack and air to air. For sea surveillance the range against a destroyer size target in rough seas is about 65 nm, in an air to air role the range against a Harrier size target is 10-14 nm. Details of scan are to be at least 140° in azimuth and a total of 60° in elevation.

(3) The remainder of the fit includes a central computer, Tacan, IFF, HUD, autopilot, VOR/ILS, RADALT and a V/UHF transceiver. It is possible that an RWR is fitted, but its frequency range is as yet unknown.

b. EW (ECCM). Details are not known but HOJ is assessed as probable.

c. Armament. 2 internally mounted 30 mm DEFA cannon each with 125 rounds. There are two hardpoints under the fuselage and 2 on each wing. The fuselage hardpoints are stressed to at least a 250 kg (275lbs), the underwing points to at least a 400 kg (880lbs). The weapons loads that may be carried by the Argentines are not known, but could include 125 kg bombs, 500 kg bombs, 113 kg Napalm bombs, 2.75" rockets and 5" rockets. It is also possible Shafrir or Magic IR missiles could be carried. French Super Etendards can carry a single AM 39 Exocet and 5 AM 39's have been delivered to Argentina. The Argentine Super Etendards are not yet modified to carry Exocet but the French believe that 4 aircraft could be modified within 10 days.

d. External Fuel load. A maximum external fuel load of one 240 gallons fuel tank under each wing and one 130 gallons tank on the centreline.

e. In Flight Refuelling. It is not known whether the Argentinian Super Etendard have an operational air to air refuelling capability, but the aircraft can be

e. In Flight Refuelling. It is not known whether the Argentinian Super Etendard have an operational air to air refuelling capability, but the aircraft can be fitted with a flight refuelling pack under the fuselage, and a retractable refuelling probe in front of the windowscreen.

f. Performance. Maximum speed at sea level is M 0.93.

g. Radii of Action.

(1) All low 4 x 400 kg bombs, 1 x 132 gallon external tank. - 140 nm

(2) All low 2 x Matra 150 rocket packs, 2 x 240 gallon external tanks. - 280 nm

(3) a. High-low-high 372 gallons of external fuel, 1 Exocet. - 375 nm

b. High-low-high, 1800 lbs bombs, 2 external tanks. - 450 nm

c. As above but with 30 minutes search - 400 nm

(4) High-low-high no external tanks, 1 EXOCET. - 245 nm

h. Take-Off Distance. Take-off distance for mission 10g 3a - 3500 ft

MIRAGE IIIE

11. The AAF is believed to have 14 Mirage IIIE aircraft operational. Although the IIIE's possess a ground attack capability, their primary role within the AAF is air defence. The aircraft has a typical operational weight of 13 tons at

take-off. Engine thrust at sea level is 13500 lbs with reheat and 9500 lbs without. A typical wing loading is 80 lbs/sq foot. The Mirage IIIE has 5 hardpoints.

12. Radii of Action.

a. Intercept profile - all high level - 2 external tanks, 2 x AAM, 2 x 30mm cannon - 615 nm.

b. Attack profile - high - low - high, 2 external tanks 1800lbs stores - 600 nm

c. As above with 30 minutes search - 550 nm

Note: Take-off distance for Intercept profile mission - 3825 ft.

13. Avionics.

a. Cyrano 2B radar. The Cyrano radar is a conventional I band (9-9.6 GHZ) pulse radar with air-to-air and air-to-ground modes. Air-to-air acquisition against a Harrier target could take place at 14 nm range, lock-on at 7nm. In the air-to-ground mode, ship detection ranges would vary from 25-50 nm dependent on sea state and target size. The Cyrano radar employs monopulse angle tracking and incorporates a Home-on-Jam facility; angle deception would therefore be difficult. The range gate system may prove vulnerable to range-gate pull-off (RGPO) techniques and the fixed frequency is likely to be susceptible to noise jamming. The radar suffers from clutter below 10,000 ft altitude.

b. Navigation. The Mirage IIIB employs Tacan, Doppler radar, ADF and a Radio Altimeter. A Doppler fed position computer provides heading and range to twelve waypoints.

The Air Data Computer provides back-up information in the event of a Doppler failure.

c. Type 97 HUD. This HUD displays the selected attack profile, including steering information and break away cues.

d. ECM. No active ECM has been associated with the Mirage IIIE but it is possible that the Piranha, Alligator or Dedale ECM pods could be carried. Piranha and Alligator are responsive noise jammers, Dedale is an older noise jammer. The IIIE is fitted with an I/low J band pulse or CW passive warner. The system provides quadrant warning and has a typical range or 14nm.

e. IFF. The IIIE is fitted with the valve IFF, NR-A1-1-A.

Armament (Air to Air)

14.

a. Matra 550 AAM. The 550 Magic is a modern, agile short range IR missile with a 23 lb blast/fragmentation warhead triggered by an IR proximity or contact fuse. The missile is capable of 35G in both axis and has a minimum launch range of 550 yards. The IIIE can carry 2.

b. Matra 530 AAM. The 530 exists in 2 versions; semi-active and IR. Both versions employ a 55lb warhead; the IR version is expanding rod and the semi-active versions is blast/fragmentation. The IR version is said to be prone to locking onto the sun. The missile is large - some 10.5 feet long - and weighs over 400 lbs. The IIIE can carry 1 on the centreline hardpoint.

c. 30 mm DEFA Cannon. 2 x 30mm DEFA cannon are fitted in the fuselage with 125 rounds of ammunition per gun. The DEFA 30mm is almost identical to the ADEN.

15. Armament (Air to Ground). The Mirage IIIE can carry up to 8000 lbs of external stores. As ground attack is a secondary role for Argentine IIIE's, the available ground attack weaponry is likely to be restricted to the 250/400kg ballistic and retarded bombs, plus the integral 30mm DEFA cannon.

NESHER (MIRAGE V)

16. The Nesher is an Israeli manufactured version of the Mirage V. It is basically a simplified Mirage III which has been optimized for the ground attack role by removal of the intercept radar and provisions of increased internal fuel capacity and increased weapon load.

17. The operational equipment is probably austere. It has a gyro gunsight possibly with range fed from a ranging radar. The Israeli aircraft were fitted with a pulse doppler range only radar, confirmation is awaited that this was supplied to Argentina. The Israeli aircraft may also have had a Lear Siegler inertial Navigation and Attack System which could also have been supplied to Argentina. It has no active EW but may have passive warning.

18. The Nesher can carry bombs, rockets, air to air missiles and external tanks. The range of weapons available and their stocks are unknown but are unlikely to be extensive. It is known that the AAF has 250 kg and 500 kg bombs, both free fall and retarded, and the Israeli Shafrir air to air missile (equivalent to early marks of Sidewinder). It is not thought that the aircraft have been modified to carry the advanced Matra 550 Magic. The Nesher has 2 fuselage mounted 30mm DEFA cannon with 125 rounds and it can carry 2 x 285 gallon external fuel tanks.

19. Typical radii of action are as follows:

a. Ground attack with 2 external fuel tanks, guns loaded. 2 Shafrir AAMs and 2 x 400 kg bombs:

(1) Lo-Lo-Lo .45M 470nm.

(2) Lo-Lo-Lo .8M 280nm.

(3) Hi-Lo-Hi, 1800lbs ordnance, 30 minutes at low level - 580nm

(4) As above but without 30 min low level phase - 650nm

b. Air intercept as above but without bombs:

Hi-Hi-Hi . 8M 670nm.

Note: Take-off ground roll distance - mission 19a3 - 4500 ft

- mission 19b - 3400 ft

APPENDIX 4 TO
ANNEX C TO
DCDS(I) 26
DATED 15 APRIL 1982

MAXIMUM RADII (UNREFUELLED)

Aircraft		Max Weapon Load	Max Radius (NM)	Radius with 30 min Search (NM)	Take Off Requirement
SUPER ETENDARD	HI-LO-HI HI-LO-HI	1800 lbs EXOCET	450	400 375	4000 ft 4000 ft
MIRAGE V	HI-LO-HI	1800 lbs	650	580	5600 ft
MIRAGE III	HI-LO-HI	1800 lbs	600	550	5400 ft
A4 P/Q (Airfield) (Carrier)	HI-LO-HI HI-LO-HI	1800 lbs 1800 lbs	690 240	620 215	4800 ft CATAPULT

ANNEX D TO
DCDS(I)/26
DATED 15 APRIL 1982

AIRFIELDS IN FALKLAND ISLANDS

MINOR STRIPS

1. There are 32 small landing strips in the Falkland Islands. They are mainly grass and they range from 1000 ft to 3000 ft long. They are designed for use by light civil aircraft up to Britten Norman Islander aircraft. Four of them have been drained and were kept open through last winter.

PORT STANLEY AIRFIELD

2. Construction:

a. The airfield was constructed by a British Civil Engineering Contractor for ODA and was completed in 1977. The existing runway (08/26) is 4100 ft long, 147 ft wide, and was designed for FOKKER F27/F28 aircraft. Design LCN was 25 but the strip is known to be up to LCN 40 in many places. Construction is 300mm of compacted crushed stone mainly on in-situ white sand. The pavement is surfaced with a minimum of 32mm of Asphalt, but it is up to 100mm thick in places.

b. Aids. RT, WT and NDB.

c. Lighting. No fixed lighting.

d. Usage. The existing airfield has been recently repaired and it should be able to take a large number of C130 sorties without serious deterioration. With regular minor repairs it should stand up to heavy usage for several months.

e. Fuel. No fuel is stored on the airfield. There is a storage capacity of 50,000 litres in Port Stanley Town belonging to the Argentine Air Force. Until the invasion, aircraft refuelling was by bowser.

f. Aircraft Parking Apron. There is a small asphalt apron (270 ft x 180 ft) near the terminal building. This would be too small to take more than three C130 Hercules, but there is a car park nearby which could be converted by Argentine engineers in a few days, and which could then take additional aircraft.

3. Airfield Development by Argentine Engineers. Argentine Air Force Engineers constructed a temporary airstrip 4000 ft long 50 ft wide in 1971 near Rookery Bay between Port Stanley and the

existing airfield. This airstrip was surfaced with US AM2 aluminium surfacing expedient which was lifted and removed from the Falkland Islands in 1978. With the engineer plant available on East Falkland Island, augmented by extra plant which is known to be intransit from Argentina, the Air Force Engineers could level and surface a completely new airstrip on a suitable site like the one previously used at Rookery Bay. Alternatively in 2 to 3 weks it is estimated that the existing airfield could be extended to 6000 ft maximum if a surfacing expedient such as the US AM2 was imported. We have no knowledge of Argentine ability to provide bulk refuelling facilities on shore. There are several sites near the airport where an LST could beach, and this could be one way of bringing in a large quantity of fuel in drums or tanks. Even if they have no dracones and pillow tanks they could very quickly set up a significant resreve of aviation fuel near the airfield.

4. Argentine Air Force Air Transport Operations from Stanley. If pressed, the Argentine Air Force should be able to operate C130 Hercules into Stanley Airport carrying a maximum payload of 17000kg. In addition the FOKKER F27 and F28s could fly in fully laden. All this assumes that the aircraft do not refuel at Stanley and that they arrive from the nearest mainland base. Because there is no permimeter track and the apron is restricted, the number of sorties will be limited. They shold have no difficulty however in unloading and clearing a minimum of say 12 aircraft per day, which would give an inward airlift in the order of 200 tons of stores per day.

5. Argentine Offensive/Defensive Air Operations. The Argentine Mirage III, Mirage V and their A4 Skyhawks could operate from Stanley Airfield with almost full payloads to defend the island. The limited parking area would again be a problem. If the Argentine Air Force Engineers choose to improve this, however, there is no reason why, say, 4 of these fighter aircraft could not operate from Stanley. The factor most likely to limit the sortie rate is that of fuel supply. With forward planning and the engineer work described above it must there fore be assumed that the Argenine Air Force could give themselves at least some air defence cover.

APPENDIX 1 TO
ANNEX D
DATED 15 APRIL 1982

TPS 43F RADAR - PORT STANLEY

INTRODUCTION

1. It is believed that the Argentines have positioned a TPS43F radar on the north western side of the Airfield at Port Stanley. They may also have positioned 2 further systems on the mainland to cover their air routes.

THE SYSTEM

2. The TPS 43F is an American tactical 3D radar made by Westinghouse of Baltimore. It differs from the TPS 43E only in the Moving Target Indicator (MTI). The system comprises of a light weight, air transportable radar designed for use with manned aircraft or SAM batteries in a wide variety of tactical environments. It provides solid 3D cover to 223 nm on a fighter or fighter bomber aircraft. It measures heights over the full range by signal amplitude comparisons in 6 channels. Extensive clutter rejection and ECCM features are incorporated in the design, including a digital coherent MTI system, pulse to pulse frequency agility, jamming analysis and transmission selection, coded pulse anti-clutter system and sidelobe blanking.

3. The system is air transportable and for ease of air shipment the equipment is carried on 2 pallets each of less than 3400kg and can be carried in 1 C130 or 2 Helicopters.

4. To minimise weight, light alloys are used in the main mechanical structure. Microminiaturisation techniques are used in the electronic circuits and the transmitter uses a completely solid-state modular to pulse linear beam twystron.

PERFORMANCE

5.

a. Range. For a fighter-bomber (eg Buccaneer)

(1) Max 408K (223nm) Against a Sea Harrier these could be reduced.

(2) Low 40Km (22nm) at 50m (164ft)

b. Elevation coverage - $0-20_0$

c. Height Accuracy +/- 305_0m at 100nm

d. Wind Resistance Operate to 52 kts, survive 92 kts.

e. Operating Temperature - 40_0 to 125_0F (-40 to + 52_0C)

CHARACTERISTICS

6. Electrical Characteristics

a. Power output 4MW peak 6.7KW average

b. Frequency: 2900 - 3100 MHz in 16 discrete steps (with pulse to pulse agility)

c. Pulse duration: 6.5 US

d. Antenna gains:

(1) Transmit 36dB

(2) Receive 40dB

e. Azimuth Beam width 1.1_0

f. IFF Azimuth Beam width 4.0_0

g. Noise figure: 4,5db

h. Prime Power: 400Hz 3ph 120/208V

7. Mechanical Characteristics

a. Weight

(1) Shelter module 3310 kg

(2) Antenna module 2050 kg

TRANSPORTATION

8. The equipment can be transported by:

a. Single E130 aircraft

b. Two Helicopter loads

c. Two M-35 trunks

d. Two sets of transporters.

9. Siting Requirements. 6 x 10.5m clear over on slope of 10% or less.

10. Reaction Time. Fifty minutes with a 6 man team.

OPERATIONS CENTRE

11. The operations centre contains 2 operating positions. Controllers have access to:

a. Digital Height readout.

b. Active/passive IFF decoders.

c. UHF ground/air comms.

d. HF point-to-point comms.

12. Expertise of the operators is not known, however, reports indicate that Argentinian Air Defence capability is poor.

VULNERABILITIES

13. MTI is not effective when pulse to pulse agility is used. Thus if active ECM is used forcing the radar to go to frequency agility, ability to see targets in a high clutter environment (ie low altitude, chaff etc) is greatly reduced. The sidelobe blanking system is quite simple and is vulnerable to high occupancy active jamming ie a number of jammers or continuous jamming will inhibit the video of the scan.

ANNEX E TO
DCDS(I)/26
DATED 15 APRIL 1982

TIGERCAT - TECHNICAL DETAILS AND EVASION TACTICS

TECHNICAL DETAILS

1. General. TIGERCAT is designed to be effective against targets either directly approaching or those offering small crossing distances or approach angles.

2. Operating data/limitations. Operating data is as follows:

   a. Ranges. Maximum 4500m, minimum 1375m (most effective range in the bracket 1800-3200m).

   b. Engagement Envelope. Maximum target speed 275 m/s (530kt); maximum target hieght 2750m; maximum crossing distance 650-800m.

   c. Visibility Requirements (optical tracking)

      (1) Target at 440kts, minimum visibility necessary is 5000m.

      (2) Target at 550kts, minimum visibility necessary is 5800m.

   d. Blind areas. To prevent the missile being fired directly over the director there is a 'mandatory' blind sector varying between 36° and 66° dependent on launcher/director separation.

EVASION TACTICS

3. General. TIGERCAT employs optical tracking and the missile speed is relatively slow, hence its relative ineffectiveness against crossing targets. Tactics to be employed will naturally depend on whether or not the locations

of the fire control units are known accurately, and what other air defence systems are employed, but the following guidelines should be considered.

4. Locations of Fire Units Known. Where locations of Fire Units are known accurateley, approach speeds head-on should be kept as high as possible, preferably above 530kts. Attacking aircraft should fly as low as possible and make full use of target screening while weaving to offer a crossing target to the missiles.

5. Location of Fire Units Unknown. While adopting the same tactcis as in 4 above, every opportunity should be taken to mask the aircraft from likely fields of view. As the missile control requires optical tracking, any interruption to the ability of the tracker to maintain visual contact, particularly at small approach angles will reduce the possibility of accurate acquisition and launch.

6. Flying Above Operating Envelope. The maximum engagement target height is 2750m (9000ft). Provided there is no air defence threat above this level, flying at 9000ft or above will additionally keep the attacking aircraft clear of AAA and small arms fire. (As the Sea Harrier has a radar, detection ranges at this height should enable enemy aircraft to be identified will outside AAM engagement envelopes).

7. Tactics following TIGERCAT firing. As soon as the pilot becomes aware that a TIGERCAT missile has been fired against him he has a number of possible evasion options. Flying low and diving for 'cover' could break the visual tracking sequence; running away from the missile at speeds in excess of 200m/s (390kts) should ensure the round drops astern and presenting a crossing target more than 800m from the fire control unit should prevent the missile successfully following the attacker.