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DCDS(I) 26

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I have highlighted the main points.

FW } 15/4

ASSESSMENT OF ARGENTINE AIR POWER

1. Attached is our assessment of Argentine Air Power. It updates our last analysis which was included in our Assessment of the Argentine Armed Forces (1) and includes much recent data, mostly obtained from the USA and France.
2. I would particularly draw your attention to our assessment that the Argentines have over 100 fighter bombers with an average unrefuelled radius of action of 550nm. Nevertheless we believe that, with the limitations of their maritime air reconnaissance and air weapons systems, the Argentines will have difficulty in bringing a substantial air attack to bear on the Task Force. Furthermore, the effectiveness of the Argentine anti-ship weapons is low.
3. We shall, of course, update this assessment as further intelligence becomes available.

J.M.J.
DCDS(I)

14th April 1982

Note: (1) DCDS(I) 26 dated 6 April 1982

DCDS(I) 26
DATED 14 APRIL 1982ARGENTINE AIR POWERINTRODUCTION

1. In our previous assessment (1) of the capabilities of the Argentine Armed Forces we addressed the question of the effectiveness of Argentine air power. We have now gathered considerably more information and are able to give a more comprehensive assessment of offensive and defensive air power and also maritime air reconnaissance. We do not deal with anti-submarine warfare which was adequately covered earlier.

AIM

2. The aim of this paper is to reassess the capabilities of Argentine Air Power.

SCOPE

3. We first deal with some general factors governing the application of air power before examining Argentine's specific capabilities for offensive air support, maritime reconnaissance, and air defence. We then consider the possible employment of Argentine's air power before drawing our conclusions.

GENERAL FACTORSDeployment

4. 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. Many of these will have to redeploy to three major airfields in the south. These are

Note:

1. DCDS(I) 26 dated 6 April 1982.

located some 400 nm West of the Falkland Islands and will be of prime importance in any campaign in the Southern Atlantic. The airfield adjacent to Port Stanley is also highly significant. Details of the 3 major airfields plus Port Stanley are at Annex A, brief descriptions are given below.

5. Rio Grande. This recently developed Naval Air Base, 400 miles from Port Stanley, has a 6,400 ft concrete runway. It is used by a wide variety of attack, maritime surveillance and transport aircraft. Concrete aprons exist for the operation of a substantial number of aircraft. Fuel and ammunition storage is provided by hardened and semi-hardened facilities.

6. Rio Gallegos. The most complete airbase in the south of the country, 419 miles from Port Stanley, this military and civil airfield can be used by any of the aircraft currently in service with the AAF. Although we have no precise data on the number of aircraft that could be operated from the airfield, it is likely to be substantial.

7. Comodoro Rivadavia. This joint military/civil airfield 518 miles from Port Stanley, provides the Argentine Air Force with its most important logistic base in the southern zone. With its 7,700 ft runway, it can act as a redeployment base for all types of aircraft and has facilities which would permit the permanent operation of large numbers of aircraft.

8. Port Stanley. The airfield at Port Stanley, built in 1977, is of crucial importance. The runway is 4,100 ft long and there is sufficient hardstanding to enable some 12 - 15 fighter sized aircraft to be parked and turned-round. The principal limitations besides the runway length are meagre fuel storage, the single access to the runway and lack of approach aids. It is possible that the Argentines could extend the 08 end of the runway in the next two weeks by up to 2,000 ft, although the need for runway extension is reduced by the prevailing westerly winds which regularly exceed 20 knots. Fuel will probably be stock-piled in drums as there is merely 11,000 gallons in the bulk installation. Some weapons and aircraft spares have probably been brought in by sea and air. We would also expect the Argentines to build a second access to the runway. Assuming these improvements are made and adequate fuel, spares and weapon stocks are provided, we believe that up to 8 Mirage type and up to 10 Pucarás, which can use grass surfaces could be operated from the airfield while leaving space for some transport and helicopter operations.

Aircraft Availability

9. There is good evidence that much of the Argentine aircraft fleet is suffering from a shortage of spares and general engineering support. The French have reported that the Mirage V is producing many problems because of the inadequacy of the spares back-up. The US have reported that, since the 1978 cut-off of American military assistance for the ageing A4B/C Skyhawks, few spares have been purchased and this has had a significant effect on aircraft

viceability. The Argentines problems will be exacerbated by the necessity to re-deploy her air forces to the southern bases which will place additional strains on what is at best an imperfect logistic system. The USA nevertheless assess that initially the Argentines could produce about 75% of their combat order of battle (given in Annex B). We believe this assessment is optimistic and that for initial operations the Argentines would be unlikely to produce more than 60% of their available aircraft. We further believe that aircraft availability would drop sharply after a short period of intensive operations. We assess the sortie rate at two per available aircraft per day which accords with the American view. Weapons stores are not thought to be high. Annex C gives the the arms purchases from France: for example, only 21 Matra R530s and 28 R550s were purchased for the 17 Mirage IIIs.

Training

10. We have been unable to obtain precise information on training in either the Argentine Air Force or Navy. It is, however clear that their equipment and engineering problems must limit aircraft availability and therefore operational training. We also know that financial constraints over the past few years have been a further inhibiting factor. There has, in particular, probably been very little weapons training. We know that no practice bombs have been acquired for the Super Etendard. It seems certain that the Argentine Navy does not fly at night whilst in the Air Force there is little more than night flying familiarisation. We would not therefore expect the Argentines to launch any air operations at night

and if they did their effectiveness would be limited by a lack of experience. On the other hand there is good evidence to suggest that Argentine aircrew are proud, well motivated and enthusiastic. They are likely to fly their aircraft with determination and dash. Providing their confidence is sustained and the weather is good the Argentines, within the limits of their equipment, will fight resolutely and effectively.

OFFENSIVE AIR SUPPORT

Aircraft

11. The A4 Skyhawk.

a. The Skyhawk is a single seat, single engined fighter bomber designed by the Douglas Corporation of America for carrier operations. Details of the aircraft are given in Annex D. It first entered service in 1956 but was not acquired by Argentina until 1970. The Argentines bought 44 A4Bs, 32 for their Air Force and 12 for their Navy. These aircraft have a reasonable navigation fit, but only a simple visual bomb sight. 20 A4Cs were also purchased in 1976, these aircraft have a sea surveillance radar (AN/APG53) in addition to the A4B fit. The radar gives the A4C a rudimentary night/all weather capability.

b. The Skyhawk is a flexible aircraft. It has a Hi-lo-Hi radius of action (1) of 620nms with a 2000lb weapons load. It has a 'buddy-system' inflight refuelling capability and it can also use the 2 KC130s for refuelling. The Argentine Air Force uses its 53 Skyhawks in the attack role although

Note:

1. This includes 30 minutes time on task at low level.

they also have an air defence capability with AAMs (AIM9J or Shafrir). The Argentine Navy use their A4Bs embarked on the carrier primarily in the air defence role retaining a secondary attack option. The Navy do not operate aircraft from the carrier at night. Further details are at Annex D.

12. Canberra B62. The Argentines have 6 Canberra B62 bombers. These aircraft have a Hi-Lo-Hi radius of action of 750nm with a 8,000 lb weapons capacity, and it can carry either bombs or rockets. The aircraft has no night or all weather delivery capability.

13. Pucara. The Pucara is a twin turboprop STOL light attack aircraft designed and built in Argentina which entered service in the mid-70s. There are some 53 of these aircraft currently in the order of battle. It has been equipped with simple navigation aids, 4 x 7.62mm machine guns and 2 x 20mm cannons. It can also carry 3,000 lbs of other weapons. The Pucara has a Hi-Lo-Hi radius of action of 320 nm with a weapon load of 2,500 lbs. Full details are given in Annex D.

14. Super-Etendard.

a. The Super-Etendard is the most advanced aircraft in the Argentine inventory, 5 aircraft being delivered in November 1981. It is a single engined, single-seat carrier-borne aircraft fitted with modern avionics to give it a night all-weather capability. The Super-Etendard can carry a range of conventional attack weapons and also AAM for air defence.

There is some doubt whether the Super Etendard can be operated from the carrier. The USA believe it might be possible while the French state that the carrier has not been fully modified and therefore the Super-Etendard could not take off at maximum all up weight. The Navy Department, however, consider that modifications to the carrier catapult in 1977 were sufficient to enable the Super-Etendard to be successfully launched. Thus, although the Argentines have not yet flown the Super-Etendard from the carrier we cannot discount them so doing - especially as the aircraft has insufficient range to operate effectively from a land base.

b. The Super-Etendard's most potent weapon is the AM 39 Exocet missile with a 45 nm range for anti-shipping and ground attack. So far the Argentines have received only 5 of these weapons and apparently they are now being installed on the aircraft. This process should be complete in the next 10 days. The Super-Etendard has a Hi-Lo-Hi radius of action of 375 nm with the Exocet missile. We are uncertain whether the aircraft procured by Argentina has an operational AAR capability. Further details are at Annex D.

15. Mirage V (Nesher). The Mirage V were acquired from Israel when they were known as the Nesher. The performance of the Mirage V is broadly similar to the Mk III, although it was designed as a simple ground attack aircraft. It can carry a range of bombs and ASMs, it can also be equipped with the Shafrir AAM. In its primary ground attack role the Mirage V

has a Hi-Lo-Hi radius with 30 minutes at low level, of 580nm with 1,800lbs of weapons and in a secondary air defence role a subsonic radius of 670nm subsonic. Details are given at Annex D.

16. Helicopters. The Argentines have a range of light attack, utility and reconnaissance helicopters. The most significant is the Hughes 500MD, 14 of which are in service with the Argentine Army.

Offensive Weapons

17. Argentine aircraft will probably use the AM 39 ASM (but they have only 5), conventional iron bombs and rockets (2). They may also have produced their own ASM, the Pescador, for use on aircraft although we believe it has essentially been developed for their helicopters. The Pescador is radio command guided with a maximum low-level range of 5nms and a warhead of 88lbs. It is a fair weather weapon which commits the aircraft fully from missile launch to impact and permits little aircraft manoeuvre. Thus the delivery aircraft is very vulnerable.

18. Argentine helicopters are equipped with AS 11 and AS 12, Pescador, 7.62mm and some rocket pods.

Effectiveness of Anti Ship Weapons

19. Aircraft delivering free fall bombs are likely to achieve less than a 5% chance of achieving major damage against the range of ships deployed. Success of Pescador attacks is critically dependant on pilot skill; for low training levels it could have up to 5% chance of achieving major damage against the larger ships and a little higher for frigates. The AM 39 has up to double the effectiveness of Pescador due to its better accuracy. These figures do not take into account ships defences. The effectiveness of the weapons to attack defended ships is assessed as very low with only the AM 39 offering a significant stand-off capability.

Note:

2. 68mm SNEB, 2.7" and 5" rockets.

AIR DEFENCEAircraft

20. Sabre. The Argentines have 7 F86 Sabres remaining out of an original buy of some 16 and is apparently held in a reserve status. The Sabre has a good radius of action at high level of 530 nm but its only armament is the 0.5 inch machine gun. We believe it unlikely this aircraft will be used in the South Atlantic operations.

21. Mirage IIIE. The Argentines have 14 Mirage IIIEs available with 3 more undergoing major repair work. It is a multi role aircraft which entered service in 1964. The Mirage IIIE has a maximum speed of M 2.0 and in the high level air defence role, a radius of action, with two drop tanks, of 615nm. In the ground attack role, with a Hi-Lo-Hi profile it could deliver 1,700 lbs of weapons over a radius of 550 nm.

22. The Cyrano radar gives the Mirage III an all weather air defence capability at high level but at low level the radar suffers from clutter problems and would be ineffective. The radar can be used to pick up ships, probably at a range of 15 to 20 nm in smooth seas. However, weapons delivery must be accomplished visually. The Mirage III carries a range of bombs, ASMs and AAMs: details are given at Annex D.

Ground Environment

23. Our information on the type and role of ground radars in Argentina is uncertain; currently there is not a nation-wide and integrated air defence system as we would understand it,

Whether there are a small number of radars, usually based on airfields, which perform a joint air traffic and air defence function. There seems little coordination between radars in reporting to higher authority and the communications are poor. The Argentines do have 6 AN/TPS 43 (4 military, 2 civilian) radar. This is a three-dimensional radar system which can be transported in a single C 130. It provides radar cover out to a maximum of 240 nm on a fighter target. Low level cover is good and a fighter should be detected as it crosses the radar horizon typically at 25 nm for an aircraft at 200 ft. The radar operates on 3 Ghz, and the military version has ECCM. At least one is now operating at Port Stanley.

SAMS

24. The Roland. The Argentines have recently acquired two Roland systems, one radar and the other optical, with 60 missiles. France have told us that the radar version is less sophisticated than that in service with their own armed forces and is susceptible to ECM, more importantly the missile fuse has reduced sensitivity. As this is a proximity fuse we believe that a very close intercept, say within a few feet, if not a direct hit would be necessary to obtain a kill. It would seem that the lethality of Roland could be much reduced from that in Service in the West. It could be deployed to Port Stanley.

25. Tigercat and Blowpipe. The Army have Tigercat launchers and 150 missiles as well as 20 Blowpipe launchers with 120 missiles. Some of them have been deployed to Port Stanley. Details of Tigercat are given in our earlier report(1).

Note:

1. DCDS(I) 26 dated 6 April 1982.

MARITIME RECONNAISSANCE

26. The Argentine maritime reconnaissance capability is vested two P2 Neptunes and six S2E Trackers of the Navy: both are ageing and give serviceability problems. The Neptune however has an excellent radius of action of some 1,800 nms but a relatively slow patrol speed of 170 kts, the corresponding figures for the Tracker are 550 nms and 130 kts. The radar in the Neptune gives a detection range of about 80 nms on medium size ships, that in the Tracker about 50 nms. Six of the Trackers are usually embarked in the carrier primarily for ASW work while the Neptune operates in both the surveillance and ASW role from a shore base. The performance of the Tracker is such that it would not be very effective operating from a mainland base in a surveillance role against the Task Force; it would be more effective operating from Port Stanley. It would seem doubtful, however, whether the Tracker would be released from its role of protecting the carrier whilst the carrier was at sea.

27. The combined open ocean search capabilities of the Neptune and Tracker are sufficiently limited to give the Argentines some difficulty in locating the Task Force. But we must assume that the Soviet Navy will pass on adequate data on the Task Force's movements to permit location and tracking by the maritime reconnaissance aircraft. However, both the Neptune and the Tracker will be very vulnerable to the Task Force's air defences. Given the suspect serviceability of the Neptune and the relatively short range of the Tracker, we judge that continuous tracking of the Task Force would be

impractical at a distance of greater than 500 nms from the Falklands. Indeed, with their meagre and vulnerable assets the Argentine's may well not attempt any surveillance at all unless it is to support an imminently planned attack.

EMPLOYMENT OF AIR POWER

Chile

28. Argentina has been at odds with Chile for some years now over the Beagle channel issue and she cannot ignore the possibility that Chile might take advantage of hostilities with the UK. We know that Chile has already moved some naval forces south and has reinforced her forces at Punta Arenas. Argentina can be expected to allocate some defensive forces to guard against this threat, depending upon the Argentinian perception of the relative threat from Chile and the UK, and of the risks involved.

Air Defence of the Falkland Islands

29. The Mirage III is the only aircraft with an all weather air defence capability but this is restricted at low altitude by the characteristics of the aircraft's radar. When operating from the mainland the Mirage III with its maximum radius of action of 615 nms, would only have some 50 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 extension of the runway to take the Mirage could therefore be important.

Attack

30. The Argentines would wish, we believe to attack the UK Task Force when it is within range of possible assault on the Falkland Islands and to attack any attempted landing.

The Mirage (V and III), the A4B/Cs and the Canberra have the necessary radius of action to reach some 200 to 330 nm respectively beyond Port Stanley. However, for all aircraft except the radar equipped Mirage III and the A4C, the conditions would have to be suitable for visual detection and search. Even in good weather and having a reasonable position report finding the Task Force and identifying the high value targets could pose very considerable problems. The Mirage III would be marginally better placed and the A4C better still, but it is not an operation which could be undertaken with confidence. It would in any event require MPA assistance, and as we have indicated this would be difficult to provide with any assurance.

31. All aircraft would perhaps have less difficulty as the Task Force closed on the Falklands and concentrated for a landing: the TPS43 and NDB could provide navigational assistance. Nevertheless the Argentines will have some difficulty in bringing a sizeable force of aircraft with a substantial weapons load to bear on the Task Force, and the problem would seem insurmountable in poor weather or at night. The only aircraft which might pose a more substantial threat is the Super-Etendard with its AM39 ASM but there are only five of these missiles and (without AAR refuelling)

the aircraft would need to operate from the carrier in order to give the necessary range.

32. For these reasons we believe the Argentines must consider using **Port Stanley airport**. They already have a few Pucarás there and the number could increase to say 10. These aircraft would have a valuable anti-helicopter capability besides providing close-support for the Argentine troops. The Pucara is particularly useful in that it can use the grass surfaces. The Tracker has also been at the airport.

33. In order to expand the use of the airport to other aircraft and, in particular, the fighter bombers the Argentines will need to carry out the improvements we noted earlier (para 8). The most important of which is probably the extension of the runway. This is only possible to the extent necessary at the Western end of the runway. Work here would give a firm indication of Argentine intentions.

34. A useful aircraft, from the Argentine view, to position at Port Stanley would be the Mirage III. This is the only all weather air defence fighter with an attack capability. Another attractive option would be the Super-Etendard, particularly, if it is unable to operate from the Carrier and lacks an inflight refuelling capability. (A technical refuelling requirement would also have to be overcome). **The deployment of the Mirage and Super-Etendard would require, ideally the extension of the Port Stanley runway to about 6,000 feet**. However, the Argentines may take risks and operate their aircraft from a shorter runway but at reduced weights. Alternatively they might fall back on the A4C which is less demanding and probably could manage off a shorter runway.

We consider, therefore that the deployment to Port Stanley airport of up to 10 Pucara and a small number of tactical aircraft (perhaps up to 8) cannot be ruled out. It will depend on the improvement of the airfield and the Argentine appreciation of the threat.

CONCLUSIONS

35. We conclude that:

- a. Initially the Argentines would be unlikely to have more than 60% of their aircraft available and this number will fall sharply after a short period of intensive operations.
- b. The sortie rate will not exceed an average of 2 per available aircraft each day.
- c. Fighter aircraft based on the mainland cannot provide effective air defence of the Falkland Islands.
- d. The Argentines have just over 100 fighter bombers with an average unrefuelled radius of action of 550 nm but, with the limitations on the capabilities of their air reconnaissance and air weapons systems, they will have difficulty in bringing a substantial force to bear on the Task Force.
- e. The effectiveness of Argentines anti-ship weapons is low.
- f. The Argentines will base up to 10 Pucara on Port Stanley. These aircraft have a good anti-helicopter and close support capability.
- g. The Argentines will consider operating up to 8 fighter bombers from Port Stanley to overcome deficiencies in both air defence and offensive support.

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.

<u>Estimated Total Capacity</u>	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 6. Four of the U type are located to the east end of R/W, remainder 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 each 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, 3,500kg 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°07'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' bright 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 Bowers 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 on the extreme S. of this country. It is capable of operating to groups of combat aircraft.

ANNEX B TO
 DCDS(I) 26
 DATED 14 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 MM38 - 30
 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

TYPE AND ROLE	HOLDINGS	REMARKS
<u>Air Refuelling</u>		
KC-130	2	
<u>Transport Medium Range</u>		
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.
<u>Transport Short Range</u>		
Douglas Skytrain C-47	15	Nearing limit of operational life.
<u>Personnel Transport</u>		
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	
<u>Helicopter - Light Attack</u>		
Hughes 500 MD	14	
<u>Helicopter - Utility</u>		
UH-1H Iroquois	5	
<u>Helicopter Reconnaissance</u>		
S-61N	1	
S-58T	2	
Bell 212	7	

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

ANNEX C TO
DCDS(I) 26
DATED 14 APRIL 1982

ARGENTINE AIR FORCE ORDER OF BATTLE

TYPE AND ROLE	HOLDINGS	REMARKS
<u>Bomber Medium Range</u>		
Canberra B62	6	1 additional aircraft could be
T64	2	recovered from 3rd line.
<u>Ground Attack</u>		
Skyhawk A-4B	33	
A-4C	20	
Pucara	53	An additional 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.
<u>Air Defence</u>		
Mirage 111-E/B	17	3 aircraft are long term unserviceable.
Mirage 5	36	
Sabre F-86	15	7 non operational.
<u>Photo Reconnaissance</u>		
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.

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 computer 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 Bull-pup, 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 known 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 fitted with a flight refuelling pack under the fuselage, and a retractable refuelling probe in front of the windscreen.
- 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 IIIIE

11. The AAF is believed to have 14 Mirage IIIIE aircraft operational. Although the IIIIE'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 IIIIE has 5 hardpoints.

2. 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 attack mission flights - ~~5400~~ ⁴¹²⁵ 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 of 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 bomb:

Hi-Hi-Hi . 8M 670nm.

Note: Take-off ground roll distance - mission 19a3 - ~~5700~~⁴⁵⁰⁰ ft

- mission 19b - ~~4100~~³⁴⁰⁰ ft