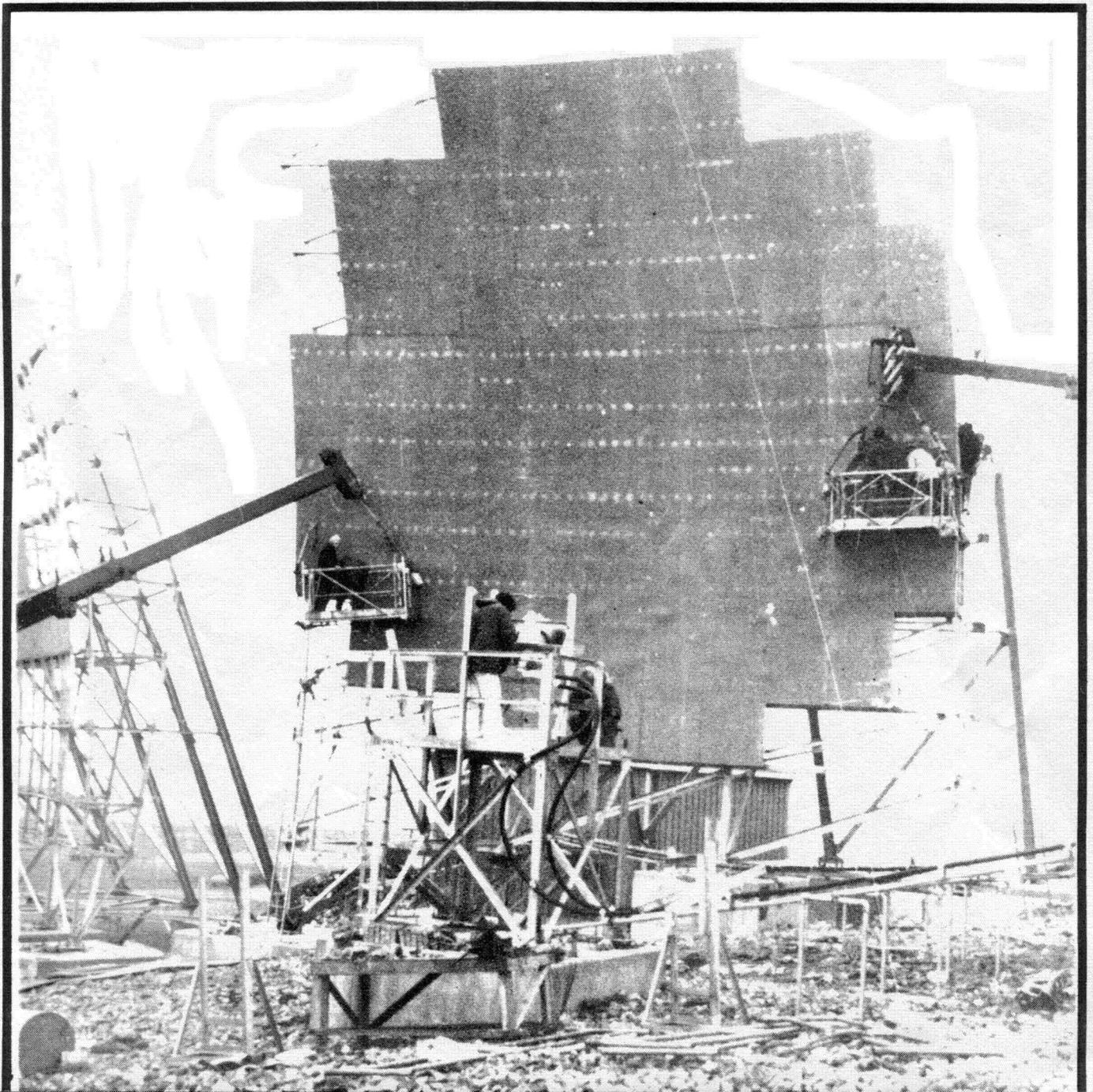


Marconi arms Apartheid

A Report on the Contract between Marconi Communications Systems Ltd of Chelmsford, and the South African Arms Bureau for the supply of Tropospheric Scatter Communications Equipment. April 1976

Issued by the Anti-Apartheid Movement, 89 Charlotte St, W1. phone 01-580 5311

Tropospheric Equipment being installed



Price: 10p

PREFACE

The British Government is pledged to implement the United Nations arms embargo against South Africa. However, from time to time there have been several reports about British military equipment being supplied to South Africa: some being sold to the South African Defence authorities because the equipment in question is not prohibited by British regulations; and other items exported on the basis of a licence granted by HMG.

It has just been disclosed that HMG has in fact granted a licence for the sale of Tropospheric Scatter Communications Equipment by Marconi Communications Systems Ltd of Chelmsford to the South African Arms Bureau.¹ There has also been a further disclosure to the effect that Marconi are providing South Africa with radar equipment to up-date the earlier South African Marconi-built air defence system.²

The issues involved in a British company being expressly authorised by HMG to supply equipment to the South African military establishment, despite the Labour Government's pledge to enforce a strict arms embargo against South Africa, are of grave importance. Moreover, since the equipment is destined for use in Namibia in order to intensify South Africa's illegal occupation of that territory, there are additional grounds for Britain cancelling the contract immediately.

The Anti-Apartheid Movement has produced this report in order to present the facts relating to the Marconi Tropospheric Scatter Communications system.

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INTRODUCTION

When the Labour Government was returned to power in 1974 it stated that it would reimpose the arms embargo against South Africa more strictly. The British arms embargo had been relaxed by the outgoing Conservative Government which was elected in 1970. The arms embargo of South Africa is an expression of international opposition to the apartheid regime. The policy of the United Nations is clearly in favour of such a boycott. Resolution S/5773 adopted by the UN Security Council on 18 June 1964 called 'upon all States to cease forthwith the sale and shipment to South Africa of arms, ammunition of all types, military vehicles, and equipment and material for the manufacture and maintenance of arms and ammunition in South Africa'.³

This resolution, adopted unanimously by the Security Council with a British Conservative Government voting in favour, has always been regarded as the very minimum which governments should do to assist in bringing an end to the evil policies of apartheid.

The British Government claims to be implementing its international obligations. On 4 December 1974 the Foreign Secretary stated:

'Following the Government's decision to reimpose the United Nations embargo on the sale of arms to South Africa, we have now completed an overhaul of the licensing arrangements for arms sales. This will ensure that our policies are fully in line with our international undertakings.'⁴

As this report will seek to show, Marconi are at present involved in supplying equipment to the South African Arms Bureau which will enable the South African regime to expand vastly its military control over Namibia, which it illegally occupies, and therefore be directly frustrating the Namibian people's struggle for self-determination. This contract is therefore in clear conflict with both the arms embargo and the Government's stated policy of supporting self-determination for the Namibian people.

THE CONTRACT

In December 1975 Marconi Communications Systems Ltd of Chelmsford contracted to supply the South African Arms Bureau with a sophisticated military communications equipment system valued at £8 million. According to press reports,⁵ it is designed to form the 'backbone' of a computer-controlled defence system covering Namibia and, in particular, the strategically important northern Namibian region.

South Africa already possesses the radar, detection devices and computer equipment to establish this system but still requires a communications system to link their surveillance centres and strike bases to the main military control centre which is presumed to be at Silvermine, near Simonstown outside Cape Town. Silvermine is a huge underground complex, proof against nuclear attack, containing some of the most advanced military electronics and computer systems

available and centre of the Project Advokaat military communications system.⁶

Marconi have never denied that their Tropospheric Scatter system is to be installed in Namibia — and although the evidence is not 100% conclusive they are known to have carried out a troposcatter survey in Namibia in 1973.⁷ What is not in dispute is that the contract exists and that South Africa is expanding its defence system in Namibia. If the South Africans are able to complete this system with the use of Marconi's Tropospheric Scatter system, it will significantly strengthen South Africa's illegal occupation of the territory.

TECHNICAL BACKGROUND

Modern military surveillance systems require complex computer systems in order to interpret the information they detect. Particularly in a vast country like Namibia, communication between the point of surveillance and a computer centre which is able to process the information received poses special problems. The system Marconi have developed provides a communication network which overcomes these difficulties.

Modern high capacity radio links use ultra-high frequency (UHF) or micro-wave signals to carry many channels of communication on a single beam. Such signals travel, like light, in straight lines; the range is thus normally limited to the horizon. Most civil communications systems use long chains of unstaffed repeater stations spaced every 30-50 miles (50-80 km) to achieve long-range flexible trunk lines. Tropospheric scatter links offer similar capacities, but can cover distances of up to 500 miles (800 km) without repeaters, well beyond the horizon.

The principle is best illustrated by analogy. Two people can send messages to each other over a distance by flashing Morse signals with torches. A hill between them will prevent each seeing the other torch, but if they direct the beams from their torches into the sky above the hill, they can see each other's beam in the sky, and can thus communicate though out of sight of each other. The beams of light are seen because light waves are 'scattered' away from the direction of the beam by dust and gas in the air, some reaching the ground on the other side of the hill. UHF and microwave signals are scattered by layers and turbulence in the lower atmosphere in a similar way, and can be received, under the right conditions, hundreds of miles from the transmitter where the direct path is blocked by the curve of the earth's surface. The received signal is usually extremely weak, its strength varying at random and with weather conditions.

Very sophisticated equipment is needed to set up a reliable long-range link using this effect. A powerful signal is focused into a pencil beam using dish aerials up to 90 ft (27 metres) in diameter, and is directed at the horizon towards the receiving site, where it is picked up on a similar aerial pointing at the transmitter. Changing conditions can rapidly make a single path useless, so two or four separate links are established between each pair of sites. In practice each site transmits and receives simultaneously via two separate paths using two aerials at each end; if four paths are needed

for reliable service, the system is duplicated. This 'belt and braces' technique gives reliable communication, but is obviously expensive. The type and quantity of equipment required can only be determined with detailed specialised knowledge of local conditions and sites available; normally the supplier would have to survey all the sites to obtain this.

MILITARY TROPOSPHERIC SCATTER SYSTEMS

Tropospheric Scatter systems are used by all major military powers for medium- and long-range communications because they offer secure, reliable links without vulnerable relay stations. A small number of large easily defensible sites can cover an entire country; the whole of Europe is covered by the NATO 'Ace High' tropospheric scatter system, which links in to the American Ballistic Missile Early Warning System (BMEWS). The technique was extensively used in Vietnam and made possible the development of the 'electronic battlefield' concept. As well as voice channels, it can carry electronic information direct from radar systems, electronic battlefield sensors, and reconnaissance aircraft. This data can be analysed by computer hundreds of miles from the battle, and command decisions computed and implemented automatically in fractions of a second. Military technology has progressed to the point where good communications are as vital to an army in the field as high explosive.

They are even more valuable in air and sea warfare, enabling centralised coordination of all forces in a battle zone using networked radar data and permitting rapid analysis of electronic warfare tactics (jamming).

THE POTENTIAL ROLE OF TROPOSPHERIC SCATTER SYSTEMS IN NAMIBIA

South Africa is committed to the maintenance of its occupation of Namibia, and is in fact expanding its military presence rapidly. South Africa's military strategy is designed to counter the actions of the Namibian liberation movement — SWAPO — whilst at the same time to have the capacity to act against possible military action by independent Africa and to create a base for aggressive action against independent Africa.

Despite a massive military presence in northern Namibia, the South African security forces have been unable to contain either the military activities of SWAPO or its political influence amongst the Namibian people. The over-stretched military forces therefore apparently intend to augment their border defences with automated detection devices, linked to the computer centre at Silvermine. The South African Defence Department are reported⁸ as recently purchasing a large quantity of battlefield sensors which are capable of detecting sound, ground vibrations caused by vehicles or infantry, or heat emissions (infra-red) from engines or people. Special types are chemical 'sniffers' to detect explosives, and optical 'tripwire' devices which signal when an invisible light beam is interrupted. These devices would be equipped with or linked to small low power transmitters, sending the information from them to local centres and thence via the Tropospheric Scatter

network to Silvermine. Sensors will respond to animal movement and other natural activity; since it is impractical to have human monitoring of a large number of sensors covering a significant area, computer analysis must be used to identify and locate potential threats whilst ignoring false alarms.

Once it has identified a threat, the computer could then activate mines or other weapons systems in the area; it could also relay information back to air bases in the area, guiding strike aircraft to the target. Finding the enemy is the biggest problem in countering guerrilla tactics, and electronic intelligence gathering can significantly reduce the demand on ground forces. These devices would probably be deployed in key border areas around the Cunene Dam and Caprivi Strip.

CONTRACT DETAILS

The equipment that Marconi are seeking to supply therefore has the effect of converting isolated military units into a coordinated defence system. It will thus alter significantly the capacity of South Africa to maintain its illegal occupation of Namibia. It is understood that Marconi were granted the contract because they were able to guarantee fast delivery; the equipment is to be installed in early 1977 and the whole system will be operational by early 1978. With the speed of events in Southern Africa, the rapid provision of this equipment is vital for South Africa.

ALTERNATIVE SUPPLIERS

It has been argued that if Marconi were not to provide this equipment the South Africans could obtain it from elsewhere. This argument does not stand up to examination. Firstly, the moral and political arguments are sufficiently strong — as Government policy recognises. The Government should, however, not allow particular groups of workers to be penalised because of the arms embargo. Secondly, by providing military equipment to South Africa those responsible are ignoring the possibility of retaliatory action by independent African States, not only against Marconi but against Britain generally. Thirdly, in this particular case rapid provision of the equipment is an overriding consideration to the South Africans which Marconi are best suited to meeting. Finally, in the light of the recent developments in Southern Africa, previous sources of military equipment to South Africa are being forced to review their policies. The pressure against the provision of this equipment from other countries would be equally strong.

BROADER IMPLICATIONS

The revelation that Marconi had secured this contract has brought to public attention the entire operation of the arms embargo. This involves a huge so-called 'grey area' of equipment which is clearly to be used for defence purposes but yet could be argued is not actual military equipment. Requests to the Government for more detailed information have secured unsatisfactory replies. In reply to a Parliamentary Question specifically on the Marconi contract, the Secretary of State

for Trade simply stated: 'The export of this equipment would be considered in the light of Government policy towards trade with South Africa.'⁹

Of even greater concern is the discovery that the present regulations governing export of military equipment actually give South Africa a favoured nation status above that of the majority of Britain's NATO allies. Statutory Instrument (1970) No 1288 Customs and Excise, The Export of Goods (Control) Order 1970, enables a whole range of equipment which have direct military uses to be supplied to South Africa without export licences and therefore requiring no government permission.

CONCLUSIONS

The action of Marconi in providing sophisticated military equipment to the South African Arms Bureau is in clear contravention of the arms embargo against South Africa and, if it is to be installed in

Namibia, will be directly used in frustrating the Namibian people's struggle for self-determination.

This case points to the need for immediate Government action to extend the arms embargo to include the provision of any equipment to the South African Defence Ministry and its agencies, and all equipment which can be used for military purposes, either directly or indirectly.

We are therefore urging the Government:

- (a) to take immediate action to secure the strict implementation of the arms embargo against South Africa;
- (b) to cancel any Export Licence granted to Marconi for the export of the Tropospheric Scatter System and take action to prevent the contract from being completed;
- (c) to alter existing Orders and legislation to prevent the export to South Africa, directly or indirectly, of all military equipment and all equipment intended for South Africa's defence establishment.

REFERENCES

- (1) *The Times*, 14 April 1976.
- (2) *The Observer*, 18 April 1976.
- (3) United Nations Centre Against Apartheid, *Notes and Documents*, No 6/76.
- (4) *The Times*, 5 December 1974.
- (5) *The Guardian*, 6 December 1975.
- (6) For details of Project Advokaat, see *South Africa: A Threat to Peace*, by Abdul S Minty, published by AAM, January 1976.
- (7) Marconi Technical Report 74/14, Research Division Section 211.
- (8) *The Guardian*, 6 December 1975.
- (9) *Hansard*, 8 March 1976.

ACKNOWLEDGEMENTS

The Anti-Apartheid Movement would like to express its gratitude to Jock Hall, a former employee of Marconi Communications Systems Ltd, for his assistance in providing technical information relating to the Tropospheric Scatter System. We would also like to take this opportunity of commending his action in refusing to work on this contract; sentiments which have been similarly expressed by Her Excellency Mme J M Cisse, Chairman of the United Nations Special Committee Against Apartheid, and Peter Katjavivi, United Kingdom and Western European Representative of the South West African People's Organisation of Namibia.