

NUMBER

20-CH/NL/0730 PART A

FOR DISPOSAL ADVICE SEE INSIDE COVER

DISPOSAL DIRECTIONS	SIGNATURE	DATE
DESTROY AFTER YEARS		
RESERVE		

FILE BEGINS

28/07/1988

ENDS

07/11/1988

FILE TITLE

DEFENCE

FROM: MICHAEL MATES MP



COMMITTEE OFFICE
HOUSE OF COMMONS
LONDON SW1A 0AA
01-219 3280 (Direct Line)
01-219 3000 (Switchboard)

MP 2/8 ✓

CH/EXCHEQUER	
REC.	01 AUG 1988
ACTION	CST
COPIES TO	

DEFENCE COMMITTEE

✓

28 July 1988

Dear Nigel,

I imagine that, following the publication of the Treasury and Civil Service Committee's Report on Financial Reporting to Parliament, your people will be giving some thought to the way forward. I thought I should let you know that my Committee also intend to publish a Report on the proposals contained in Cm 375, so far as they affect the Ministry of Defence.

Although we will have some detailed suggestions to make about the presentation of information on defence, my colleagues and I are broadly in agreement with the Government's proposals. I hope, therefore, that the Government will be able to take account of our views, despite the fact that our Report will not be published until after the Adjournment.

Yours ever,

Michael

CHAIRMAN

The Rt Hon Nigel Lawson MP
Chancellor of the Exchequer
HM Treasury
Parliament Street
LONDON SW1P 3AG



- cc: Chief Secretary
- Economic Secretary
- Sir P Middleton
- Mr Anson
- Mr Burgner
- Mr Turnbull
- Mr Spackman
- Mr Fox
- Mr Waller
- Mr Robson
- Mr Burr
- Ms Barber
- Mr Nicol
- Mr King
- Mr Kerley
- Mr Call

Treasury Chambers, Parliament Street, SW1P 3A
 01-270 3000

28 July 1988

The Rt Hon Lord Young of Graffham
 Secretary of State for Trade and Industry
 Department of Trade and Industry
 1-19 Victoria Street
 LONDON SW1H 0ET

INDEPENDENT REVIEW OF DEFENCE RADIO FREQUENCY SPECTRUM

Thank you for sending me a copy of your letter of 21 July to George Younger covering the proposed Government Response to the report on this review.

Although there is no direct connection between this Review and the work on which we have now embarked on deregulation and the introduction of market forces into the management of the frequency spectrum, we need to be clear that the terms of the Government Response do not prejudice any changes we might eventually wish to introduce as a result of our current work. It would therefore be advisable to amend slightly paragraph 3 of the draft Response to read:

"The Government notes the Committee's conclusion that the overall balance... (as drafted)...."

I am copying this letter to the Prime Minister, Douglas Hurd, George Younger and to Sir Robin Butler.

NIGEL LAWSON

FROM: JANET BARBER
DATE: 26 JULY 1988

1. MR ROBSON *SAL 25-7*
2. CHANCELLOR

cc Chief Secretary
Economic Secretary
Sir Peter Middleton
Mr Anson
Mr Burgner
Mr Turnbull
Mr Spackman
Mr Fox
Mr Waller
Mr Burr
Mr Nicol
Mr King
Mr Kerley
Mr Call

Ch. Content to write to proposal?

OK ✓ ✓ ✓ 27/7

INDEPENDENT REVIEW OF DEFENCE RADIO FREQUENCY SPECTRUM

You received a copy of the letter on this from Lord Young to Mr Younger, covering a draft of the Government's response to the report on this Review (copy at Annex A). This submission suggests that you write to Lord Young with the aim of ensuring that the draft response does not prejudice future possible changes to the management of frequency spectrum arising from the current initiatives on deregulation. A draft letter is at Annex B.

2. As you are aware E(CP) are currently discussing the deregulation and introduction of market forces into the management of the frequency spectrum. The Independent Review of Defence Radio Frequency Spectrum has no direct connection with this work. Its main aim was to determine whether the defence allocation of spectrum within the specified band was excessive, or was wastefully used. The Committee carrying out the review came to the conclusion that everything was all right on this front, although more sharing of defence allocations with civil users should be pursued. Its recommendations are attached at Annex C.

3. The problem arises through the terms of the proposed Government response. Paragraph 3 says:

"The Government is glad to see the Committee's recognition that the overall balance of military and civil apportionment of the part of the spectrum under review is about right and that the management of the apportionments should continue without change."

4. We are concerned that, taken in a wider context, this could conceivably be a hostage to fortune in respect of any changes in allocation or management resulting from the introduction of market forces to public sector use of the spectrum. It is probably unlikely that DTI would seek to use

it in this way. Indeed there is a section in the review report on market forces in spectrum management which says that proposals on market forces in spectrum management currently under review would lead to administrative changes. However IAE are already concerned at the dilution of proposals for spectrum deregulation generally, and would not want to see any further movement in this direction. And PXE are concerned that the proposed wording would concede unduly that sound decisions about military use can be made without spectrum pricing.

5. Ideally therefore we would prefer the draft response be changed to read:

"The Government notes the Committee's conclusion that"

and the draft letter to Lord Young suggests this.

6. DTI have told me that this draft response has been agreed interdepartmentally by officials. The Treasury does not seem to have been involved in this, and an intervention at this very late stage may not be successful. As a fallback, however, we can at least get it on the record that our clear understanding is that the Government response is without prejudice to any future changes resulting from deregulation and introduction of market forces.

Janet Barber

JANET BARBER
DM1

The Rt. Hon. Lord Young of Graffham
Secretary of State for Trade and Industry

The Rt Hon George Younger MP
Secretary of State
Ministry of Defence
Whitehall
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CHIEF SECRETARY	
REC.	21 JUL 1988 1
TO	Mr R Stobson
TO	Cx, Sir Middleton
TO	Mr Brown, Mr Bigger
TO	Mr Fox, Mr Tomlinson
TO	Mr Call

CH/EXCHEQUER	
REC.	21 JUL 1988
TO	CST
TO	
TO	
TO	
TO	

Direct line 215 5422
Our ref LQ3ABG
Your ref
Date 21 July 1988

John Gleave,

We exchanged correspondence in May regarding the handling of the Stage 1 report of the Independent Review of Defence Radio Frequency Spectrum submitted by the Chairman, Sir Kenneth Corfield.

We agreed that the initial announcement of the receipt of the report, and our intention to publish an abridged version, should be made by one of my Ministerial colleagues in DTI. I am proposing to announce the Government Response in the same manner, timed to coincide with the publication of the abridged report. I would be grateful if you could let me know if you are content with this course of action. A copy of the text of the Response is attached.

I am copying this letter to the Prime Minister, Nigel Lawson, Douglas Hurd and to Sir Robin Butler.

*Mr Barber
Advice M
SAC
21-7*

*Y-6
Tand*

OFFICIAL RESPONSE TO THE INDEPENDENT REVIEW OF DEFENCE RADIO
FREQUENCY SPECTRUM (470 MHz to 3400 MHz)

1. A published version of the Report of the Defence Spectrum Review Committee has been made available and copies have been placed in the Library.
2. The Government accepts, and will act in accordance with all the recommendations of the Committee.
3. The Government is glad to see the Committee's recognition that the overall balance of military and civil apportionment of the part of the spectrum under review is about right and that the management of the apportionments should continue without change.
4. The Committee's recommendations concerning increased civil sharing of several frequency bands managed by the Ministry of Defence will necessitate further work to determine the precise geographical and frequency constraints and the appropriate management techniques. Also, measures must be devised to ensure that, when necessary, the Ministry of Defence can quickly gain exclusive access to previously shared frequencies.
5. The Committee's other recommendations concerning greater openness about defence use of the spectrum and the use of automatic data processing are already being acted upon.
6. Finally, the Government expresses its appreciation for the work of Sir Kenneth Corfield and his colleagues and the positive nature of their report.

DRAFT
LETTER
TO LORD YOUNG

Pse type print

ANNEX B

DRAFT LETTER TO LORD YOUNG

WR head 65

INDEPENDENT REVIEW OF DEFENCE RADIO FREQUENCY SPECTRUM

Thankyou for sending me a copy of your letter of 21 July to George Younger covering the proposed Government Response to the report on this review.

on which

Although there is no direct connection between this Review and the work we have now embarked on ~~on~~ deregulation and introduction of market forces into the management of the frequency spectrum, ~~it is essential to be~~ clear that the terms of the Government Response ~~does~~ not prejudice any changes we might eventually wish to introduce as a result of our current work. ~~Therefore I think that~~ it would be advisable to amend slightly paragraph 3 of the draft Response to read:

the

the young

"The Government notes the Committee's conclusion that the overall balance... (as drafted)...."

N-2-

We recommend that:

1. There should be no change in the management of allotments between civil and defence use.
2. Ministry of Defence spectrum should be more widely shared with civil users wherever defence interests are not jeopardised and specifically in the bands 1365 to 1400 MHz, 1429 to 1450 MHz and 2310 to 2450 MHz.
3. The use of the so called ETACS bands, the bands 870 to 888 MHz and 915 to 933 MHz, already provided by the Ministry of Defence in central London on a pre-emptive basis to accommodate the growth in cellular radio, should be extended to other conurbations on the same basis whenever necessary and provided that conflict with defence use is avoided.
4. The Ministry of Defence and the Department of Trade and Industry should explore the use of pre-emptive management techniques as a means for increasing band sharing with civil users. The use of defence mobile bands for outside broadcasting links would be an example.
5. Without prejudice to security the Ministry of Defence should make every effort to present to responsible commercial users a description of their broad pattern of frequency usage in order to promote a better understanding of the Ministry's needs, typically by conferences arranged to inform and answer questions.
6. The precise nature of the ADP assistance required by the Ministry of Defence Signals 2 should be assessed with the help of specialised contractors and provided without delay.



MINISTRY OF DEFENCE WHITEHALL LONDON SW1A 2HB

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PMF

MO 30V

20th July 1988

CHIEF SECRETARY	
REC.	- 1 AUG 1988
ATTN:	Mr Robson
TO:	<i>Cy</i> Sir P. Middleton
	Mr Anson, Mr Buggen,
	Mr Fox, Mr Turnbull
	Mr Call

01 AUG 1988
CST
✓ 1/4

Dear David

Thank you for your letter of 21st July about the Stage I report of the Independent Review of the Defence Radio Frequency Spectrum. I am content with your proposal that the Government response be announced in the same manner, and coincidentally with, the announcement of the receipt of the report.

I am copying this letter to the Prime Minister, Nigel Lawson and Douglas Hurd, and to Sir Robin Butler.

Yours ever,
George
George Younger

The Rt Hon Lord Young of Graffham

FROM: D W OWEN
DATE: 2 AUGUST 1988

Jim Hibberd 2/8/88

- 1. MR HIBBERD
- 2. CHANCELLOR OF THE EXCHEQUER

cc : Sir Peter Middleton
Sir Terence Burns
Mr Scholar
Mr Sedgwick o/r
Mr P J Davis

Ch/Content for DTI to publish these adjustments in the 'Pink Book'?

Yes - 2 X look forward to more similar count n n lines.

EXPORTS - ADJUSTMENTS FOR TIMING DISTORTIONS

DTI and Customs have now completed their analysis of timing distortions associated with the introduction of the single administrative document (SAD) at the beginning of 1988. They intend to publish revised figures for exports and the current account, adjusted to take account of these distortions, in the Pink Book on 24 August and in the July monthly trade press notice on the following day. The Pink Book will only include revised annual figures for 1987 but the trade press notice will show adjusted monthly figures for 1988 as well.

2. The main effect of the introduction of the SAD is thought to have been concentrated in the December to February period. The submission of export documents was accelerated at the end of December, so that some exports which would normally have been recorded in January were brought forward into the December figures. But new SAD documents were submitted more slowly than usual in January, with the result that some recorded exports were delayed until the February figures. The proposed adjustments, which are slightly smaller than those described in my note to you of 28 June (on recent trends in non-oil visible trade), are set out below:

Monthly	Published series*	Exports		Adjusted series	£ million Current Balance	
		Published series*	Adjustment		Published series*	Adjusted series
1987 Nov	6881			6881	- 525	- 525
Dec	6817	- 200		6617	- 480	- 680
1988 Jan	6209	+ 250		6459	- 1159	- 909
Feb	6176	- 50		6126	- 1044	- 1094
Mar	6441			6441	- 572	- 572
Quarterly Q4	20500	- 200		20300	- 1397	- 1597
Q1	18826	+ 200		19026	- 2776	- 2576

* June trade figures press notice, 27 July 1988

CONFIDENTIAL

3. The adjusted series shown above, derived by applying the proposed adjustments to the latest published figures, are included for illustrative purposes only - the figures which will eventually be published will reflect other, unrelated revisions incorporated in the Pink Book. The effect of the adjustments is to raise the current account deficit in 1987 by £200 million and reduce the cumulative deficit in 1988 by the same amount. Most of the switch is between December and January - in fact DTI have not finally decided whether to publish the -£50 million adjustment to February. (An alternative would be to set this to zero and round the January adjustment to £200 million.)

4. Although we have been involved in discussions with DTI and Customs on the effects of the SAD, we were not consulted on whether or when to publish these adjustments. However, DTI were aware of our preference for delaying publication. We feel that publication of the adjusted figures might give the impression that they are now entirely free distortions. But, in view of the problems other EC countries are still having with their trade figures, it is probably too soon to be confident about this. Furthermore, the relatively small proposed adjustments do little to ease the problem of analysing trends in exports around the turn of the year. The fall in exports in the first quarter is still very hard to explain. We strongly suspect that there are problems with the seasonal adjustment of this series and would have preferred to wait to see the results of the current DTI review of the seasonal adjustment procedures, before deciding on how to adjust the figures for SAD distortions.

5. On the other hand, we have been saying publicly for several months that the figures were distorted, and DTI feel under pressure to provide some quantification. The adjustments would be presented as similar to those made in October 1981 to take account of a speeding up of the flow of information associated with new procedures introduced at that time (see attached draft extract from the Pink Book). And, though it would be unfortunate, there would be nothing to stop DTI revising the adjustments subsequently in the light of further information.

6. I would be grateful for your reaction to the proposed publication of these adjusted figures. The CSO are not expecting to have to make any further changes to the Pink Book, so an attempt by us to remove the adjustments would not be welcome news to them. If we wanted to do this we would need to move quickly.

Dand Owen

D W OWEN

leading to largely offsetting changes to both exports and imports. However, the conceptual basis of the balance of payments figures is not affected by this change in presentation. To achieve the coverage required for balance of payments purposes, as well as the trade in finished manufactures in the *Overseas Trade Statistics*, an adjustment is now made to exports to include the value added in refining gold and in the production of proof coins, and to imports to cover the value of gold used for finished manufactures. The import adjustment is based on commercial statistics on hallmarking of gold items (published by the Assay Offices of Great Britain) and gold used in other finished forms (e.g. electronics, dentistry; published by Consolidated Gold Fields plc). Other transactions in gold with overseas residents, predominantly those involving bullion, bullion coins and semi-manufactured gold items (e.g. bars, rods, etc) are regarded as being in gold held as a financial asset and are recorded in capital transactions (see section 8).

Exports by letter post. The *Overseas Trade Statistics* do not include exports from the United Kingdom by letter post. Information about the most important element of this trade, the export of books, is obtained from publishers and retail and wholesale booksellers. Other details are derived from a sample inquiry made by the Post Office.

Additions and alterations to ships. Certain work carried out on UK-owned and registered ships in foreign yards, and on overseas-owned ships in UK yards, comprises additions and alterations rather than repairs. Such work is properly regarded as a component of visible trade. For work on UK-owned ships an estimate is obtained from the quarterly inquiry on capital expenditure carried out by the Department of Trade and Industry; this estimate is an addition to the imports figure. An estimate for the work on overseas-owned ships is derived by the Department of Trade and Industry from various enquiries.

Forces parcels. Parcels sent to and by UK forces overseas are recorded in the *Overseas Trade Statistics*. Since the forces are UK residents (as defined - see page 5) these parcels should be excluded for balance of payments purposes. The figures to be deducted are based on returns giving the numbers of such parcels. The average value per parcel is obtained from sample checks.

North Sea installations. Some goods imported directly from overseas to UK production sites in the North Sea are omitted from the *Overseas Trade Statistics*. In addition it is sometimes necessary to make revisions to the value of imported installations recorded in the *Overseas Trade Statistics*. The information to make these coverage and valuation adjustments is obtained from quarterly inquiries of the petroleum and natural gas industry. Included within the adjustments are drilling rigs delivered abroad and not included in the *Overseas Trade Statistics*, details of which are obtained from the same sources as for second-hand ships.

Three of the North Sea oil fields, Frigg, Murchison and Statfjord lie in both UK and non-UK waters. Trade involving these fields is allocated according to determinations of the respective shares of oil reserves. Thus only the United Kingdom share of the value of goods delivered to any one of these fields from a foreign country will normally be included as an import: similarly only the non-United Kingdom share of goods delivered from the United Kingdom to one of the fields will be counted as an export. (A similar procedure is followed for other balance of payments transactions.) Occasionally there is a re-determination of the resources of a shared field. In these circumstances the contribution to (or reimbursement of) a proportion of the development costs has been treated as a purchase (or sale) of fixed assets at the date of the re-determination and appears as an adjustment to imports (or exports) of goods.

An adjustment to UK exports in 1976 has been made in respect of exports of pipe for one of the two pipelines from the Frigg field to the United Kingdom. The field is in both UK and Norwegian waters and one pipeline is treated as

being in Norwegian ownership and the second as being in United Kingdom ownership. *Miscellaneous*

This includes a variety of ad hoc adjustments. In particular, the figure for 1987 includes the reduction (of £200 million) mentioned under 'Timing basis of the figures', below.

Recording of exports

Some exporters and agents fail to submit their documents or record incorrect valuations. It is possible on a sample basis to check the customs documents against pre-shipment documentation, and to check the valuations recorded on the documents against invoices. Regular assessments of the quality of recording are made, resulting in the net adjustments shown. Before October 1981 the adjustments for missing documents were estimated from a comparison of customs documents with ship and aircraft manifests.

Total allowances for under recording are allocated to the individual lines in Tables 2.2 and 2.3 *pro rata* to the reported values of exports.

Timing basis of the figures

To achieve consistency with the basis for estimating other countries' external transactions - and the estimates of domestic transactions given in the national accounts - exports and imports of goods should be recorded at the time when the ownership of the goods change.

The compilation of the *Overseas Trade Statistics* is geared to the declarations made by exporters and importers which are received in the statistical office of HM Customs and Excise.

Exporters provide some information before the goods are shipped. Except where revenue or restricted goods are concerned, exporters registered with Customs have the option of providing the full details when they present the goods for shipment (export pre-entry) or of using the Simplified Clearance Procedure (SCP). Under SCP, provided a suitable pre-shipment advice has been presented in lieu of the export entry, a detailed export declaration must be sent within fourteen days of shipment directly to the statistical office.

Before 1 October 1981, registered traders were normally allowed fourteen days after shipment before a completed export document had to be presented at the ports, and there was a further interval before copies reached the statistical office. Adjustments were introduced to take account on this recording of exports of this speeding up in the flow of export information in October 1981. A similar adjustment has been made for 1987, to reflect the temporary reduction in the interval between shipment and receipt of documents which occurred in anticipation of the introduction of new recording and classification procedures in January 1988.

Monthly processing of the export statistics begins a few days before the end of the calendar month. Thus the figures for any calendar month relate on average to goods passing through the ports in a monthly period ending about the middle of that calendar month.

Importers are usually required to present their documents before they can obtain customs clearance and remove the goods. Moreover, the monthly total for imports includes those recorded in documents relating to the month which reach the statistical office up to the third working day after the end of the month. Thus the imports statistics correspond closely to movements through the ports during the calendar month.

Geographical analysis

The analysis given in Table 2.2 of visible trade between the United Kingdom and major economic groupings is based on the *Overseas Trade Statistics* which, apart from a small amount conveyed in low value consignments (in 1987 consignments of less than £475 in value each), are classified by country in detail.

dti

the department for Enterprise

The Rt. Hon. Lord Young of Graffham
Secretary of State for Trade and Industry

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[Handwritten signature]

CH/EXCHEQUER	
REC.	03 AUG 1988
ACTION	
COPIES TO	CST, EST, Sir P. Middleton, Mr ANSON, Mr BURGNER, Mr TURNBULL, Mr SPACKMAN, Mr FOX, Mr WALLER, Mr ROBSON, Mr BURR, Ms BARBER, Mr NICOL, Mr KING, Mr KERLEY, Mr CALL

[Handwritten mark: 3/8]

Direct line 215 5422
Our ref PS1BHB
Your ref
Date 2 August 1988

Dear Jonathan,

I am writing to advise you of the outcome of the letter from the Chancellor to our Secretary of State regarding the Government Response to the Report of the Defence Spectrum Review Committee.

Unfortunately the letter arrived after the question had been tabled and answered, and therefore we were unable to benefit fully from your advice. However, the point made is extremely pertinent, and we had indeed already picked up the need to moderate the tone of paragraph 3. We had therefore changed "The Government is glad to see the Committee's recognition that the overall balance ... is about right ..." to "The Government notes the Committee's finding that the overall balance ... is about right ...".

I trust this outcome will reassure the Chancellor.

Yours sincerely,
Gareth Jones

GARETH JONES
Private Secretary



Copy No 2 of 34 copies

MO 26/4L

PRIME MINISTER

CH/EXCHEQUER	
REC.	05AUG1988 ✓ 5/8
ACTION	CST
Comments TO	

A NEW TANK FOR THE ARMY

I need to replace the Army's ageing and obsolescent Chieftain tanks, some 600 in number. A number of options have been identified, and I shall be putting proposals to OD in the autumn. No immediate decisions are necessary, but you, and other colleagues, may find it helpful to have advance warning of the complex issues involved. For my part, I would welcome colleagues' views on two specific issues, and any other comments they may wish to make at this stage.

2. Chieftain entered service in 1965, and now lacks the capability demanded by the modern battlefield. It suffers from poor protection; inadequate mobility; an unsatisfactory fire control system; insufficient firepower; and very poor reliability. It is thus inadequate against the current threat, and its mechanical unreliability could not be reversed except at unacceptable cost. For all these reasons, I do not think the option of enhancing Chieftain which has been canvassed by John Major (his Private Secretary's letter of 12th July) is a serious runner. All the evidence, including detailed operational analysis, confirms that the tank will remain a main battlefield weapon for the foreseeable future. There are clear indications that the Soviet Union plan to introduce new tanks with better armoured protection and greater firepower. Even today, their best tanks are equal or superior to those of NATO, and greatly superior to Chieftain. On the 1st(British)Corps front their tank fleet outnumbers ours by 3 to 1.



3. I propose, therefore, to replace the Chieftain fleet in the early 1990s. Within the last couple of years, it has become clear that revolutionary changes in tank armament, such as liquid propellants or an electro-magnetic gun, will not be available before 2010 at the earliest, although a larger calibre conventional gun might possibly emerge in about the year 2000. We are concentrating, therefore, on options based on existing conventional technology.

4. Three basic options have been evaluated:

a. an improved version of our other main battle tank, Challenger, known as Challenger 2 Mark 2, incorporating not only a new high pressure gun, and new ammunition, known as CHARM and currently under development for existing Challengers, but also a new and greatly improved fire control system;

b. the German Leopard 2; and

c. the American Abrams M1A1.

Leopard 2 and Abrams are already in service in large numbers with the German and United States Armies respectively. Their performance is proven, and further improvements are planned of which we would take advantage were we to select one of these options. Although the turret of Challenger 2 does not yet exist, this tank would be an evolutionary development of, and have considerable automotive commonality with, the Challenger 1 tank currently in service.

5. Each of the three has its strengths and weaknesses. Leopard 2 meets the requirement in most respects, but suffers from the major shortcoming of weak frontal armoured protection. Abrams is expected to have adequate protection following a planned up-armouring programme; other enhancements are expected to remedy features which currently make it difficult to command in a battlefield environment.



Its gas turbine engine has a high fuel consumption. Both Leopard 2 and Abrams, unlike Challenger, stow ammunition above the turret ring, which in certain circumstances may increase the vulnerability of the tank. The relative vulnerability of the options is being examined, though full information is not easily available.

6. From an operational standpoint, the Defence Staff's preference, on present evidence, would be for Challenger 2 Mark 2 provided the manufacturers, Vickers Defence Systems (VDS), could achieve the specification (which includes a high level of reliability). They regard Abrams, with the improvements planned by the US Army including up-armouring, as meeting the operational requirement, but there are training and logistic penalties which are discussed below. The Defence Staff consider that the inadequacy of Leopard 2's frontal armour makes it operationally unacceptable.

7. One major factor affecting our choice is interoperability of ammunition. Each of the three potential replacement tanks has a 120mm gun, but whereas the Chieftain and Challenger guns have a rifled bore, the current Abrams and Leopard 2 have the same smoothbore gun. The two types of gun use different and incompatible types of ammunition. Thus, at present, there is no opportunity for the British Army to draw on German or American 120mm ammunition stocks, or vice versa, in case of need.

8. It is militarily and politically highly desirable for allied armies to be able to fire each other's ammunition; and, at first sight, this seems a powerful argument for replacing Chieftain with a tank with a smoothbore gun. (This course would be even more attractive if, as may be possible, the US are on the brink of achieving a major improvement in the penetrative power of their smoothbore ammunition. We are investigating this further). But if we were to do so, and to stop there, we would lose interoperability



within 1st(British)Corps, since the Chieftain replacement (smoothbore) would be incompatible with our relatively new Challenger 1 (rifled bore). The Defence Staff's present assessment (which might have to be reviewed if the US achieved the major improvement just mentioned) is that in an Army of our size, the logistic and other penalties of losing interoperability within the Corps could outweigh gains through interoperability with other Corps. We could only achieve interoperability in both directions if we replaced Chieftain with a smoothbore solution and re-equipped our current Challengers with a smoothbore gun. This would mean giving them a new turret and would add greatly to cost and technical risk; it would also mean writing off past expenditures on CHARM.

9. If we were to fit our tank fleet with smoothbore guns, we would not achieve full interoperability with allies because:

a. 60% of allied tanks are fitted with the older 105mm rifled bore guns. In the year 2000, this will still be true of a significant proportion of the total, including the entire holding of the Belgians, who are 1st(British)Corps' neighbours on their southern flank. But it will not be true of the Americans who, more significantly, will have completed the conversion of their tanks based in Germany to the 120mm smoothbore gun by that date;

b. for political reasons, the Germans do not hold the depleted uranium (DU) round which the Americans use and we plan to adopt (whether we go for a rifled bore or smoothbore solution) because it penetrates armour more effectively. But smoothbore guns could still fire German ammunition.

There is a possibility that full interoperability will be achieved around the turn of the century through a larger calibre conventional gun (we have recently signed a statement of intent with



the USA, Germany and France to collaborate to this end), or later (around 2015) through a gun using revolutionary electro-magnetic technology.

10. On my instructions, SACEUR was asked for his formal judgement of the relative importance of (a) increasing interoperability within Northern Army Group (NORTHAG) as against preserving the existing interoperability within 1st(British)Corps; and (b) increasing interoperability within NORTHAG earlier through adoption of a smoothbore gun by our Army, as against doing so later through the adoption by all armies of a common and large calibre NATO gun around the year 2000. SACEUR's answer gives the first objective priority over the second in both cases, though he also attaches key importance to the eventual larger calibre gun. The Defence and General Staffs are considering his answer.

11. Training and logistic factors tell in favour of the Challenger 2 option. In brief:

a. Because Challenger 2 would have a good deal of commonality with the existing Challenger 1 whereas Leopard 2 or Abrams would have none, selection of either of the latter would necessitate duplication of training. In particular, an additional 36 tanks (48 including repair backing) would be needed for the army's training ground in Canada to make possible unit training on both types.

b. Similarly, if Leopard 2 or Abrams were chosen the Army would need more spares to support two types of tank;

c. Leopard 2 and Abrams carry fewer rounds of ammunition than Challenger, and Abrams uses more fuel. More logistic vehicles and drivers would therefore be required.



Two different types of ammunition would degrade the efficiency of the Army's logistic organisation in war. As the battle progressed, the two types of tank could no longer be kept separate. Total stocks of ammunition would need to be increased. Even then, it would be difficult to guarantee the right balance between the two types of ammunition at the point of tactical resupply. This is an argument not against Leopard 2 or Abrams in themselves, but against choosing either without also retrofitting Challenger 1 with a smoothbore gun.

12. The industrial implications of our choice are important. The background is VDS's purchase of the Royal Ordnance (RO) tank factory at Leeds in 1986. At that time, only one further order for a regiment's worth of main battle tanks, was foreseen up to the end of the century. The sale price reflected that prospect. No commitment to any further orders was made, or implied. As a result of the sale, VDS took over outstanding MOD orders for Challenger 1 and were awarded the contract for the remaining regiment. They have chosen to build, purely as a private venture, an entirely new factory at Leeds; this was completed early this year. Work on Challenger 1 orders will be finished in early 1990; there is no work currently foreseen for the factory beyond this date. VDS are now the design authority with sole responsibility for the design integrity, maintenance and improvement of the current tank fleet, as well as the UK's sole national manufacturer.

13. A decision to replace Chieftain with an overseas tank which met the operational requirement would, in principle, be acceptable in military terms. But it would mean the loss, probably irreversible, of a UK tank design capability, which, in turn, could place at risk our ability to improve existing tanks. From the point of view of reducing defence R&D spending, such a loss could be seen as an advantage, provided the industrial consequences are accepted. These could be substantial both for VDS, and for their principal



sub-contractors, who include RO (gun), Marconi (gun control), Perkins (power pack), Barr and Stroud (sighting systems) and David Brown (transmission). VDS currently employ some 1600 at their two plants at Leeds and Newcastle; direct sub-contractors account for a further 6000 jobs. Lack of production work would impair the company's ability to continue to support the army's current tank and heavy armoured vehicle inventory. In the longer term, it would erode the UK's ability to play a full part in any future tank collaborative programme, if we so wished. VDS say that they would not be prepared to stay in the tank business on the basis of the manufacture of foreign tanks under licence, though whether this would be their last word is questionable.

14. The costs of the options are still being refined on the basis of quotations from the manufacturers supplemented by budgetary estimates. They are not yet sufficiently reliable for me to present to colleagues. But in very broad terms, the acquisition costs (development, production and initial spares) would be in the band £1.5-2.0 billion at average 1987/88 prices. I have had costings made not only of the three basic options in paragraph 4 but also of four other options designed to enhance interoperability within NORTHAG; the seven options are listed at Annex. To retrofit existing Challengers with a smoothbore gun and a new turret would probably cost at least an additional £0.5 billion. (A smoothbore Challenger would, however, be more saleable overseas).

15. The ceilings on defence R&D spending make the overseas options more attractive. If Challenger 2 Mark 2 were chosen, VDS might be prepared to fund part of the R&D cost as a private venture, recouping their outlay through the unit price. But even if they did not, the R&D cost to my Department would be relatively small, would fall mainly over the next three years, and could probably be accommodated.



16. I believe three of the options listed at Annex can be eliminated. Although selection of Leopard 2 might be attractive from an Alliance point of view, the weakness of its frontal armour seems an overriding objection. This would rule out options 2 and 5. I am also inclined to eliminate option 6 in view of the technical difficulty of the integration task involved.

17. I have therefore instructed the staffs to concentrate further work on options 1, 3, 4 and 7. As I have said, I shall be making recommendations to colleagues in the autumn, with a view to an announcement before Christmas. Meanwhile, it would be helpful to know:

a. whether colleagues hold strong views on the importance of ammunition interoperability within the Alliance, bearing in mind that to achieve the full operational benefits for the British Army we would need to be prepared to install new guns and turrets in existing Challengers; and

b. whether colleagues are prepared to contemplate the industrial implications of buying a foreign tank. If not, I ought not to pursue serious negotiations with the overseas manufacturers further.

18 I am copying this minute to OD colleagues and to Sir Robin Butler.

Ministry of Defence

4th August 1988

C.Y.



The following options are being costed:

Option 1. Retain Challenger 1 with improved rifled bore gun (CHARM) and improved fire control system (CHIP); replace Chieftain with Challenger 2/2 with CHARM rifled bore gun.

Option 2. Retain Challenger 1 with improved rifled bore gun (CHARM) and improved fire control system (CHIP); replace Chieftain with Leopard 2 with smoothbore gun.

Option 3. Retain Challenger 1 with improved rifled bore gun (CHARM) and improved fire control system (CHIP); replace Chieftain with Abrams with smoothbore gun and incorporating planned improvements (including up-armouring).

Option 4. Refit Challenger 1 with new turret and smoothbore gun; replace Chieftain with Challenger 2/2 incorporating smoothbore gun.

Option 5. Refit Challenger 1 with new turret and smoothbore gun; replace Chieftain with Leopard 2.

Option 6. Refit Challenger 1 with new (Abrams) turret and smoothbore gun; replace Chieftain with Abrams with smoothbore gun and incorporating planned improvements (including up-armouring).

Option 7. Retain Challenger 1 with improved rifled bore gun (CHARM) and improved fire control system (CHIP); replace Chieftain with Challenger 2/2 incorporating smoothbore gun.

tank

COMMERCIAL IN CONFIDENCE

ECONOMIC SECRETARY

FROM : S A ROBSON
DATE : 5 AUGUST 1988

c.c. Chancellor
Chief Secretary
Mr Anson
Mr Burgner
Mr Turnbull
Mr Sutton o.r.
Mrs Edwards
Mr Call

A NEW TANK FOR THE ARMY

This submission recommends you respond to the Defence Secretary's minute of 4 August to the Prime Minister (attached).

2. The minute deals with a major investment decision. At present the UK Army has a tank fleet of which half is the relatively new Challenger tank and half the relative old Chieftain tank. Mr Younger wants to replace the Chieftans. This is expensive. Mr Younger puts the cost at £1½-2 billion.

3. His minute calls for no decisions as such. It is a device for closing down options. We need to see that all options are kept on the table until each has been properly evaluated.

4. The main option Mr Younger rejects is to retain the Chieftain - on a basis which incorporates some enhancements which are currently in the pipeline. The Chief Secretary's private secretary wrote to Mr Younger's on 12 July (attached) making the point that Ministers should have a clear analysis of the cost-effectiveness of investment in new tanks by comparison with the alternative of enhanced Chieftain. This is an entirely reasonable position. We want to know what extra effectiveness we would get for spending £1½-2 billion.

COMMERCIAL IN CONFIDENCE

5. One reason Mr Younger does not want to consider this issue is that the work MOD have so far done suggests we get very little extra effectiveness. This work is not yet complete, and further refinement may change the picture, but it emphasises the need to keep the retention of Chieftain as an option and as a baseline for comparing the other options.

6. Much of the rest of Mr Younger's minute is taken up by an inconclusive exposition of :

- (a) the broad advantages of replacing Chieftain with a British tank (Challenger Mark 2), with a US one (Abrams) or a German one (Leopard);
- (b) whether the replacement tank should have a rifled bore gun (like the existing Challenger and Chieftain) or a smooth bore one (like Leopard and Abrams). If we went for the latter there would then be the issue of replacing the guns in the existing Challengers (cost £½ billion). The benefit would be a greater degree of ammunition inter operability within NATO;

He goes on to point out the industrial implications of buying a foreign tank. The UK has one tank manufacturer - Vickers Defence Systems. A decision to buy a foreign tank would probably mean the end of the UK's tank design capability.

7. Mr Younger ends by rejecting the Leopard option (on the grounds it has poor armour plating) and asks if Ministers ;

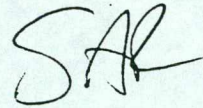
- (a) have strong views on ammunition interoperability within NATO bearing in mind the cost of fitting new guns to the UK existing Challengers:
- (b) are prepared to contemplate buying a foreign tank.

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8. The answer to these questions is that Ministers should not take a view until Mr Younger comes up with a full and clear analysis of the cost and benefits of the different options. Until this is done it is premature to rule out Leopard or to take a position on ammunition interoperability or buying foreign. It is simply sloppy to look for views before presenting the facts.

9. I recommend you write to say that enhanced Chieftain must remain an option and that none of the other options should be set aside until OD has had a chance to consider a full and proper analysis of each.

10. I attach a draft.



S A ROBSON

DRAFT MINUTE TO THE PRIME MINISTER

A NEW TANK FOR THE ARMY

In John Major's absence I am responding to George Younger's minute of 4 August.

2. As George makes clear, a decision to replace Chieftain represents an investment of £1½-2 billion and of another £½ billion if existing Challengers were retrofitted with a new gun and turret. As made clear in John Major's private secretary's letter of 12 July, it will be important that such a decision is taken on a properly informed basis.

3. A key question is the extra effectiveness which we would be obtained for our Armed Forces by making this investment. This can only be established by comparing the capability we would have if the investment were made with the capability we would have without the investment. The latter capability is represented by the option of retaining the enhanced Chieftain.

4. Until this analysis has been done, the retention of enhanced Chieftain must remain an option. The operational analysis which my officials have seen so far suggests that the replacement of Chieftains provides very little increase in capability and does not appear to be cost-effective. I understand this analysis may be further refined, and the final results could be different, but retention of enhanced Chieftain is the appropriate baseline for analysing the costs and benefits of the other options as well as, possibly, the preferred solution.

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5. As regards the issue posed in George's paragraph 17, it seems to me inappropriate to take a view on these matters until we have a full and clear analysis of the relative cost-effectiveness of the various options. For the same reason, I would not favour ruling out at this stage the solutions based on Leopard. I do take George's point that the cost in training and logistics will vary considerably between the options. It will be important that these are examined on the basis of their full through life costs.
6. I am copying to members of OD and to Sir Robin Butler.



10 DOWNING STREET
LONDON SW1A 2AA

From the Private Secretary

✓
12/8

CH/EXCHEQUER	
REC.	12 AUG 1988
ACTION	CST
COPIES TO	

11 August 1988

[Handwritten initials]

Dear Brian,

A NEW TANK FOR THE ARMY

The Prime Minister has read the Defence Secretary's minute of 4 August about the options for replacing the Army's Chieftain tanks. She has also seen the minutes by the Economic Secretary and the Minister of State, FCO on the same subject. She does not wish to offer any particular views at this stage but would prefer to wait to see the fuller study which is promised. Given the scale of the expenditure, the study must be a very thorough one and not seek to pre-judge the outcome by artificially limiting the options considered.

I am copying this letter to the Private Secretaries to members of OD and to Sir Robin Butler.

yours sincerely
C. D. Powell

(C. D. POWELL)

Brian Hawtin, Esq.,
Ministry of Defence.



✓12/8

CH/EXCHEQUER	
REC.	12 AUG 1988
ACTION	CST
COPIES TO	

[Handwritten signature]

PM/88/41

PRIME MINISTER

A New Tank For The Army

In Geoffrey Howe's absence I am commenting on George Younger's minute of 4 August. I have also seen Peter Lilley's minute of 10 August. My answers to the two questions in paragraph 17 of George's minute are:

- a) Yes. 1(BR) Corps will not be fighting alone in the Central Region: it must make operational sense to maximise the extent to which the Allies' ammunition needs can be provided in common. SACEUR's view to this effect, reported in paragraph 10 of the minute deserves to be given due weight. At a time when we are arguing that the Alliance must move towards greater interdependence and commonality in response to increasing pressures on defence budgets, we must show we are trying to practice what we preach in a field as important as tanks.

- b) Yes. The situation for VDS if we do not buy Challenger 2 MK2 will be no worse than they expected when they bought the Royal Ordnance tank factory in 1986; it will be

/better



better, if they agree to build foreign tanks under licence. It is also not clear whether VDS would have a role to play in any updating of the Challenger 1. The industrial considerations in paragraph 13 of George's minute are important: but not important enough to conclude that maintaining a British tank-building capability should drive the decision.

I should like to make also five other comments at this stage:

- a) While we should keep open the foreign and smooth-bore options, the costings promised for the Autumn will be critical.
- b) George's minute offers no judgement on the relative operational merits of smooth- and rifled-bore guns. But the smooth-bore club is gradually attracting more members, with SACEUR's encouragement. If we want to be able to contribute to future developments, we shall need to join it too at some stage.
- c) There is never likely to be a time when we replace our whole tank fleet at once. The more often we opt for internal rather than intra-Alliance interoperability in making partial changes, the wider the gap will become between us and Allies.
- d) The options which George proposes to continue to examine include none involving both a new foreign tank and a smooth-bore gun for Challenger 1. I think that this is a pity: if only for comparison's sake, it would be valuable

/to



to keep option 6 among the runners. An important consideration, when we address this issue in the Autumn, will be the relative cost and technical difficulties of fitting Challenger 1 with CHARM and of fitting it with a smooth-bore gun and turret.

- e) Given the key role of the Leopard 2 tank in the defence of the Central Front, it is alarming that MOD's judgement is that its frontal armoured protection is inadequate. Do the German military authorities share this view? And is there no prospect of our drawing on our own expertise and tank armour to collaborate on improving the Leopard 2's capabilities?

I am copying this minute to members of OD and to Sir Robin Butler.

A handwritten signature in black ink, appearing to be 'L. Chalker', written in a cursive style.

MRS LYNDA CHALKER

Foreign and Commonwealth Office
11 August 1988

COMMERCIAL IN CONFIDENCE

« Pslchx Pslcst
 Mr Anson Mr Burgess
 Mr Turnbull Mr Sutton
 Mr Robson Mrs Edward
 FROM: ECONOMIC SECRETARY
 DATE: 10 August 1988 Mr call

PRIME MINISTER

A NEW TANK FOR THE ARMY

In John Major's absence I am responding to George Younger's minute of 4 August.

2. As George makes clear, a decision to replace Chieftain represents an investment of £1½-2 billion and of another £½ billion if existing Challengers were retrofitted with a new gun and turret. As made clear in John Major's private secretary's letter of 12 July, it will be important that such a decision is taken on a properly informed basis.

3. A key question is the extra effectiveness which would be obtained for our Armed Forces by making this investment. This can only be established by comparing the capability we would have if the investment were made with the capability we would have without the investment. The latter capability is represented by the option of retaining the enhanced Chieftain.

4. Until this analysis has been done, the retention of enhanced Chieftain must remain an option. The operational analysis which my officials have seen so far suggests that the replacement of Chieftains provides very little increase in capability and does not appear to be cost-effective. I understand this analysis may be further refined, and the final results could be different, but retention of enhanced Chieftain is the appropriate baseline for analysing the costs and benefits of the other options as well as, possibly, the preferred solution.

5. As regards the issue posed in George's paragraph 17, it seems to me inappropriate to take a view on these matters until we have a full and clear analysis of the relative cost-effectiveness of the

COMMERCIAL IN CONFIDENCE

various options. For the same reason, I would not favour ruling out at this stage the solution based on Leopard. I do take George's point that the cost in training and logistics will vary considerably between the options. It will be important that these are examined on the basis of their full through life costs.

6. I am copying to members of OD and to Sir Robin Butler.

PLC
PETER LILLEY

dti

the department for Enterprise

SECRET AND COMMERCIAL IN CONFIDENCE

TOTAL COPIES 7

COPY No. 5

BF 12/19
~~ppp ft~~

The Rt. Hon. Lord Young of Graffham
Secretary of State for Trade and Industry

The Rt Hon George Younger TD, DL, MP
Secretary of State for Defence
Ministry of Defence
Whitehall
London
SW1A 2HB

Department of
Trade and Industry

1-19 Victoria Street
London SW1H 0ET

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CH/EXCHEQUER	
REC.	18 AUG 1988
ACTING	CST
COPY TO	

✓
18/8

Direct line 215 5422
Our ref DW2AOZ
Your ref
Date 16 August 1988

George

A NEW TANK FOR THE ARMY

Thank you for sending me a copy of your minute of 4 August to the Prime Minister.

I wrote to you on 5 July, setting out my views, in anticipation of a bilateral discussion between us which in the event had to be put off. Since the issues remain much as they were then, it may be helpful if I now circulate a copy of that letter to OD colleagues - attached.

I would add three points arising from your minute. As regards the cost of the various options, I note that you are still working to produce reliable estimates. But one of the striking points to emerge from the extensive MoD assessment of the options completed last December was that the overall programme cost of Challenger 2/2 came out at £1,547 million as against £2,457 million for Abrams M1A1 and £2,457 million for Leopard 2. Unless there has been a sea-change in the position, we would appear to be paying a heavy premium for choosing the American or German tanks quite apart from the extra cost of retrofitting smoothbore guns to Challenger 1.

As regards interoperability of ammunition, I am not very clear about the intentions of the USA. You say in paragraph 9(a) of your minute that by the year 2000 they will have completed conversion of their tanks based in Germany to the 120mm smoothbore gun but later in the same paragraph, and in paragraph 10, you mention the possibility that all NATO armies will have adopted a common and larger calibre gun by around the same date. I find it difficult to see how the Americans

would be able to proceed down these two, apparently mutually exclusive, paths on the same timescale. Nor am I sure about the importance of the Americans in this context - are they significant neighbours of our tank fleet on flanks other than the southern one (which will continue to be covered by the Belgians with the 105mm guns)? That apart - though this is very much a matter for you and the Defence Staff - I do wonder how much weight we should really place on interoperability of ammunition. In the heat of battle when ammunition supplies are crucial, can we in practice expect much scope for sharing? The smoothbore route also poses a problem of timing. I understand that adapting Challenger 2/2 to accept a smoothbore gun would take about two years. This would not only delay the in-service date (to which I believe you attach importance) but also worsen the production gap at the VDS plant in Leeds in the early 1990s, so - I presume - increasing the cost of the option still further.

My final point concerns the industrial case, which you have set out very fairly. The Government should clearly not be in the business of keeping VDS going at all costs if the products they offer are uncompetitive, overpriced or unacceptable on military grounds. But since none of that seems to be the case here, and since the foreign options themselves carry cost and other disadvantages, I think that we would have real difficulty in giving a convincing public explanation of why we had rejected the British option.

Turning to your specific questions to colleagues, my answers are as follows. I regard interoperability of ammunition as just one of the factors to be taken into account in reaching a decision: on the evidence to date, the benefits look uncertain and the costs and other disadvantages high. As regards the industrial implications of buying a foreign tank, the benefits of overseas purchase seem far from conclusive and the drawbacks serious.

I am copying this letter to OD colleagues and to Sir Robin Butler.

The Rt. Hon. Lord Young of Graffham
Secretary of State for Trade and Industry

The Rt Hon George Younger TD DL MP
Secretary of State for Defence
Ministry of Defence
Whitehall
LONDON
SW1A 2HB

Direct line 215 5422
Our ref PS6AKN
Your ref
Date 5 July 1988

Neil Kemp

MAIN BATTLE TANK PROCUREMENT

As you know, David Plastow of Vickers came to see me on 29 June to press his case for an early decision on the replacement for Chieftain. Since I understand we cannot now get together until next Thursday, 14 July, I thought it might be helpful if I outlined the issues as I see them.

A number of basic points are, I believe, not in dispute - entry into service of the next generation of main battle tank, probably developed through collaboration with our NATO allies, has moved out to around the year 2010 because of the time needed to bring about a step-change in gun technology; and replacement of Chieftain, which has been operationally desirable for some years, cannot wait till then. Hence the decision to search for a substitute with an early start to production so that Chieftain can be completely phased out by the year 2000 at latest. Against this background, the Government now face two issues - the choice of replacement, and the timescale for reaching a decision.

On the first question, I understand that MoD's own exhaustive study last year of domestic and foreign options concluded in favour of Vickers' Challenger 2 Mark 2 on operational and economic grounds, with industrial considerations pointing the same way. The operational assessment was that Challenger would be superior to the US and German contenders - Abrams and Leopard 2 - in its fire-control system (certainly well into the 1990s), its armour (particularly over Leopard), its fuel economy (over Abrams) and in terms of retaining commonality within the British tank fleet.

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As regards armament, I believe the judgement was that moving from a rifled to a smoothbore gun would have the advantage of securing interoperability with NATO forces but would be expensive, would offer no significant improvement in military effectiveness, would reduce the ammunition load and make it more vulnerable to attack, and would remove commonality within the UK tank fleet itself. Moreover, interoperability within NATO would be only partial (since, unlike us, the Americans, Germans and others use both 105mm and 120mm guns in their own fleets) and would do no more than anticipate for a few years the full interoperability that should anyway be achieved within the next decade if current NATO tanks are up-gunned to take them through to 2010.

On the question of cost, I understand that MoD's figures last December showed Challenger to be the cheapest option per tank and even more so in terms of the overall procurement programme (the latter reflecting the greater expense of introducing a half-fleet of vehicles and ammunition different from the existing Mark I Challengers). Even with the strengthening of sterling this year and whatever price reductions may emerge from the current updating of tenders by the American and German companies concerned, the gap was so large that I imagine the overall programme cost of Challenger will still be lower than for both Abrams and in particular Leopard. Moreover, over a ten year procurement period I wonder whether we can anyway be confident that the dollar and deutschmark exchange rates would remain even as relatively favourable to the foreign options as they are now.

Turning to the industrial consequences, I accept that they are not decisive on their own. Vickers bought the Royal Ordnance factory at Leeds in the clear knowledge that at the time there was no prospect of the British Army ordering a new model of tank in the early 1990s. They presumably either hoped to get by with residual domestic business and exports or, more likely, were speculating that the manifest shortcomings of Chieftain would force its early replacement. Be that as it may, I am clear that there would have been no question of the Government buying new tanks simply so as to improve Vickers' workload.

But it seems to me that the position has now changed. The fact is that, regardless of Vickers' needs, there is now to be a significant order for the British Army. If Vickers fail to win it, they will presumably lose some if not all of the residual MoD business they had expected and will suffer a real blow to their credibility in export markets. In the new circumstances, I believe that we have to look at the

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industrial consequences of buying overseas. It is hard to see how Vickers could avoid the run-down and eventual closure certainly of Leeds and perhaps of Newcastle as well (risking over 1,500 jobs in total). There would be a knock-on effect into their extensive network of sub-contractors and their suppliers (who employ about 6,000 people around the country). The UK capability in main battle tank manufacture would be ended, leaving us with no industrial input to future collaborative programmes. This would in addition put at risk UK capability in the potentially large export market for retro-fitting new guns and engines to tanks in service with foreign armies. And all this would come about just two years after we as Government supported the rationalisation of the industry on the basis that the UK could support only one efficient producer of heavy fighting vehicles.

On the second principal issue - the timing of a decision - you will of course be familiar with Vickers' need for an early resolution one way or the other. They are sinking their own money into development of Challenger - £10 million to date, now rising by £2 million a month - and, with completion of the 7th Challenger Regiment at the end of next year, a production gap in 1990 is fast approaching. While I know that you are concerned to weigh all the factors carefully, I think that after the lengthy negotiations which have taken place between the MoD and Vickers it is not unreasonable of David Plastow to ask for a very early decision on whether or not he is to get the order. Speed anyway seems to be as much in our own interest: the longer the production gap that has to be financed at Leeds, the higher the cost of the Vickers' option if that is what is eventually chosen.

In sum, my basic concern is that, on the information I have seen, Challenger is a credible and cost-effective solution which on MoD's own assessment to date seems to score over the overseas competitors. NATO interoperability is of course desirable but it is surely only one of the considerations to be weighed in the balance. I think we should need to have significantly more compelling reasons than I have so far heard if we were to be able to justify in public a decision not to go for Challenger. I look forward to discussing these issues with you next Thursday.

Y. C. Plastow



FROM: MISS S J FEEST
DATE: 31 August 1988

PPS/CHANCELLOR

PER CAPITA GDP

The Financial Secretary thought that the Chancellor should be aware of the attached article and CSO press release.

Handwritten notes in red ink:

Thanks for v. nice Susan Feest (SJS)

It was an article
 just with France (or
 the rest of the world)

At this point, this is what
 I know (a) when France
 available as (b) when
 gap was last as
 low as 4%.

SUSAN FEEST

FROM: D SAVAGE

DATE: 25 August 1988

APS/FST 43A/2

cc Mr Matthews

PER CAPITA GDP

The Financial Secretary was interested in the article in last Tuesday's Financial Times on international comparisons of per capita GDP. The CSO press release referred to in the article is attached.

2. The press release gives comparisons, based on OECD data, of per capita GDP for twenty countries. The comparisons are given alternatively at market exchange rates and purchasing power parities. As the press release explains, the latter basis is to be preferred because market exchange rates are liable to fluctuate and do not always accurately reflect relative price levels.

3. Let me know if you require any further information.

DS

D SAVAGE

27.8.88

Britons better 'off than Austrians and Belgians'

By Ralph Atkins, Economics Staff

PEOPLE in Britain are better off in terms of spending power than Austrians, Belgians or Italians, according to official figures yesterday.

Central Statistical Office calculations show the gross domestic product per capita in the UK compares more favourably with many other countries if exchange rates taking into account differences in purchasing power are used. The usual method is to use market exchange rates.

The CSO estimates, based on Organisation for Economic Co-operation and Development figures, use purchasing power parities - the exchange rate that would have to prevail if exchanged money retained its purchasing power.

Using market exchange rates, for instance, GDP per capita in 1987 in Italy was 12 per cent higher than in the UK. But using purchasing power parities, UK citizens turn out to be slightly better off.

Market exchange rates do not allow fully for price differences between countries. The number of pounds that will buy a selection of goods and services in the UK will not necessarily buy the same elsewhere.

Out of 20 countries in the OECD covered by the CSO,

GDP PER CAPITA (UK = 100) 1987		
	At market exchange rates	At PPP* exchange rates
UK	100	100
Belgium	121	96
Denmark	171	108
France	135	104
West Germany	157	109
Greece	40	52
Ireland	70	59
Italy	112	98
Luxem- bourg	142	118
Nether- lands	126	101
Portugal	32	51
Spain	64	70
US	156	149
Canada	138	140
Japan	168	107
Austria	134	96
Finland	153	105
Norway	171	127
Sweden	163	113
Switzer- land	223	130

*Purchasing power parity
Source: Central Statistical Office

Britain rises from 16th position on market rates to 13th measured by purchasing power.

The CSO says there is also less variation between countries when purchasing power parities are used. That means the gap between Britain and more affluent countries is lessened.



**PRESS
AND
INFORMATION SERVICE**

CSO

CENTRAL STATISTICAL OFFICE

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LONDON
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CSO(88)72
22 August 1988

**PURCHASING POWER PARITIES AND INTERNATIONAL
COMPARISONS OF GDP PER HEAD**

This press notice updates the one issued by the Central Statistical Office on 16 February 1987. Revised estimates are given for purchasing power parities (PPPs) and GDP per head at PPPs for 1985 and 1986, together with preliminary figures for 1987. The tables attached to this notice have been recalculated from data published by the Organisation for Economic Co-operation and Development (OECD). Market exchange rates and PPPs are represented in terms of sterling, as are the per capita GDP estimates.

Purchasing Power Parities

The amount of currency that will buy a selection of goods and services in one country, when changed into another country's currency, will not necessarily buy the same selection in the second country. International travellers often find it necessary to make special allowances for higher (or lower) prices ruling in other countries because market exchange rates for currencies do not fully allow for price differences. Purchasing power parities indicate the exchange rate that would have to prevail if money, changed from one country's currency into another, were to retain the same purchasing power.

The first two columns of the tables attached to this press notice afford a comparison of exchange rates and PPPs for each country of the European Community and for the USA, Canada, Japan and five other OECD countries.

In 1986, for instance, £1 sterling would, on average, have converted into 3.18 German marks (DM) at market exchange rates. However, the PPP suggests that to buy the same basket of goods and services in both countries, the exchange rate needed to be DM 4.35 to the £. Thus 37% more sterling was required to buy the same basket in Germany as it would have done in the UK. As another illustration, £1 would have bought 205 Spanish pesetas. But to maintain the same purchasing power, an exchange rate of



only 180 pesetas to the £ would have been necessary. Thus 12% less sterling was needed to buy the same basket in Spain as in the UK.

PPPs, like many price indices, relate to the prices of items making up typical baskets of goods and services purchased in the countries featured in the tables. The PPPs quoted in this press notice relate to all final expenditure on goods and services and are thus applicable to GDP estimates.

Comparisons of Gross Domestic Product per Head

A method often used to compare affluence in different countries is to calculate GDP per head in terms of a common currency. As already indicated, quoting GDP per head with currencies converted at market exchange rates can give a misleading impression of the comparable standard of living between countries. This is because market exchange rates do not necessarily reflect the differences in price levels between countries. If estimates of GDP per head are expressed in a common currency using PPPs, the resulting comparison will more appropriately reflect the relative standards of living. Moreover, PPPs are less likely to be distorted by short term movements in market exchange rates.

The last four columns of the tables for 1985, 1986 and 1987 show comparative figures of GDP per head using:

- (a) market exchange rates,
- and
- (b) purchasing power parities.

In both cases these are expressed in terms of sterling and in index form, referenced on the UK estimates. As an illustration, GDP per head in 1986 was 35 per cent higher in France than in the UK, when calculated at market exchange rates. In terms of PPPs, however, GDP per head in France was only 6 per cent higher. As a general rule, the tables indicate that there is less variation in GDP per head between countries when PPPs are used rather than market exchange rates.

PURCHASING POWER PARITIES AND PER CAPITA GDP IN SELECTED OECD COUNTRIES

1985

	Currency units per £ sterling		Per capita GDP*			
	-----		£ sterling		UK=100	
	Market exchange rates	GDP Pur- chasing Power Parities (PPP)	Market exchange rates	PPP exchange rates	Market exchange rates	PPP exchange rates
United Kingdom	1.00	1.00	6200	6200	100	100
Belgium	76.29	78.52	6300	6100	102	99
Denmark	13.60	17.25	8800	7000	143	113
France	11.53	12.80	7400	6600	119	107
Germany	3.78	4.37	7900	6900	128	111
Greece	177.21	136.09	2600	3400	42	55
Ireland	1.21	1.27	4000	3800	65	62
Italy	2450.58	2292.25	5800	6200	93	99
Luxembourg	76.29	75.88	7500	7600	122	122
Netherlands	4.26	4.49	6700	6400	109	103
Portugal	218.14	116.55	1700	3100	27	51
Spain	218.31	167.78	3300	4300	54	70
USA	1.28	1.76	12900	9400	208	152
Canada	1.75	2.15	10700	8700	173	141
Japan	306.29	390.85	8600	6700	138	108
Austria	26.56	29.23	6700	6100	109	99
Finland	7.95	10.51	8600	6500	139	106
Norway	11.03	15.19	10900	7900	177	128
Sweden	11.04	14.35	9300	7200	151	116
Switzerland	3.15	4.26	11100	8200	179	132

Source: OECD publication Monthly Economic Indicators, July 1988, rescaled to sterling basis and, for the per capita calculations, using exchange rates, GDP estimates and mid-year population estimates based upon those quoted in the publication.

* At current market prices as opposed to factor cost. Figures for GDP per head in each column are individually rounded to the nearest hundred in £ sterling, or to the nearest unit for the index numbers in the last two columns.

PURCHASING POWER PARITIES AND PER CAPITA GDP IN SELECTED OECD COUNTRIES

1986

	Currency units per £ sterling		Per capita GDP*			
	Market exchange rates	GDP Pur- chasing Power Parities (PPP)	£ sterling		UK=100	
			Market exchange rates	PPP exchange rates	Market exchange rates	PPP exchange rates
United Kingdom	1.00	1.00	6600	6600	100	100
Belgium	65.53	78.71	7800	6500	118	98
Denmark	11.86	17.45	11000	7500	167	113
France	10.16	12.95	8900	7000	135	106
Germany	3.18	4.35	10000	7300	151	111
Greece	204.52	156.54	2700	3600	41	54
Ireland	1.10	1.30	4700	4000	72	60
Italy	2186.22	2392.67	7200	6500	109	99
Luxembourg	65.53	75.22	9200	8000	139	121
Netherlands	3.59	4.36	8200	6800	125	103
Portugal	217.26	132.81	2000	3300	31	51
Spain	205.23	179.76	4000	4600	61	70
USA	1.47	1.75	11800	9900	180	151
Canada	2.04	2.13	9700	9200	147	140
Japan	247.07	385.69	11000	7000	167	107
Austria	22.39	29.32	8500	6500	129	98
Finland	7.43	10.52	9800	6900	148	105
Norway	10.84	14.47	11400	8600	173	130
Sweden	10.45	14.87	10700	7500	162	114
Switzerland	2.64	4.28	14000	8600	213	131

Source: OECD publication Monthly Economic Indicators, July 1988, rescaled to sterling basis and, for the per capita calculations, using exchange rates, GDP estimates and mid-year population estimates based upon those quoted in the publication.

* At current market prices as opposed to factor cost. Figures for GDP per head in each column are individually rounded to the nearest hundred in £ sterling, or to the nearest unit for the index numbers in the last two columns.

PURCHASING POWER PARITIES AND PER CAPITA GDP IN SELECTED OECD COUNTRIES

1987

	Currency units per £ sterling		Per capita GDP*			
	Market exchange rates	GDP Pur- chasing Power Parities (PPP)	£ sterling		UK=100	
			Market exchange rates	PPP exchange rates	Market exchange rates	PPP exchange rates
United Kingdom	1.00	1.00	7100	7100	100	100
Belgium	61.01	76.42	8600	6900	121	96
Denmark	11.17	17.73	12200	7700	171	108
France	9.82	12.74	9600	7400	135	104
Germany	2.94	4.25	11200	7700	157	109
Greece	220.88	172.12	2900	3700	40	52
Ireland	1.10	1.29	5000	4200	70	59
Italy	2119.28	2419.97	8000	7000	112	98
Luxembourg	61.01	73.49	10100	8400	142	118
Netherlands	3.31	4.13	9000	7200	126	101
Portugal	230.05	142.00	2300	3700	32	51
Spain	201.83	182.44	4500	5000	64	70
USA	1.63	1.72	11100	10600	156	149
Canada	2.17	2.13	9800	10000	138	140
Japan	236.27	368.33	11900	7700	168	107
Austria	20.65	28.74	9500	6800	134	96
Finland	7.18	10.52	10900	7500	153	105
Norway	11.01	14.78	12100	9000	171	127
Sweden	10.36	14.96	11600	8000	163	113
Switzerland	2.44	4.18	15800	9200	223	130

Source: OECD publication Monthly Economic Indicators, July 1988, rescaled to sterling basis and, for the per capita calculations, using exchange rates, GDP estimates and mid-year population estimates based upon those quoted in the publication.

* At current market prices as opposed to factor cost. Figures for GDP per head in each column are individually rounded to the nearest hundred in £ sterling, or to the nearest unit for the index numbers in the last two columns.

7.9.9.88

CONFIDENTIAL

FROM: S A ROBSON

DATE: 9 September 1988

CHANCELLOR

cc ~~Chief Secretary~~
Mr Evans
Mr Tyrie

ROLLS ROYCE

1 ask the gentleman of Mr Tyrie's help to help me to see Sir F. Toombs

I understand Sir Francis Toombes told you last night that the Treasury was preventing MOD announcing that Rolls Royce had won a helicopter engine competition.

2. MOD are developing with Westlands a new helicopter - EH101. This will come in a number of variants. The engine for the basic variant has already been chosen. It will be supplied by General Electric (GE).

3. MOD may want a higher powered engine for some variants. They have been looking at two possible engines - another GE engine and a Rolls engine. The GE engine is in production. The Rolls engine is still in development.

4. MOD phoned me on Wednesday to say they wanted to announce that Rolls had won the competition. I pointed out:

a. I had no material from MOD on the relative merits of the two engines. If MOD did eventually want to buy an engine of this sort, it would cost some £450 million. Such a decision would need Treasury approval and we could want to satisfy ourselves that the right option had been chosen (you will recall from EFA that the choice of option is often a matter of debate);

b. MOD had no contract terms agreed with Rolls other than a price. If GE were removed from the competition before contract terms were agreed, we could be sure that we would get less satisfactory terms from Rolls.

7.9.9.88

CONFIDENTIAL

no
c. there was MOD procurement reason to take a decision now. The only reason was to help Rolls marketing effort overseas.

5. Lord Trefgarne then approached the Chief Secretary's office who gave a similar response. Lord Trefgarne then said he did not need Treasury agreement to set aside an option. Miss Evans wrote to his private secretary as attached.

6. This was a simple bounce. If we accept that MOD can strike out options without giving the Treasury a proper assessment, we lose a great deal.

7. One final point, I understand Sir Francis may have told you that he had seen Treasury letters to MOD. As Miss Evans letter is classified "confidential", this would be a breach of security. If Lord Trefgarne does make an announcement, or fails to disown any Rolls announcement, we might take this up.

SAR

S A ROBSON

Mr Anson

Mr Rosson



M Evans

Treasury Chambers, Parliament Street, SW1P 3AG

Julian Scopes Esq
 Private Secretary to
 Lord Trefgarne
 Ministry of Defence
 Main Building
 Whitehall
 London
 SW1A 2HB

M Evans

6 September 1988

Dear Julian

We spoke about Lord Trefgarne's wish to announce tomorrow that the Rolls engine is the MOD's preferred option for the higher powered engine variant of a new EH 101 helicopter. We have been given no warning of this proposal which relates to a project costing some £450 million. You said that Lord Trefgarne has been advised that this announcement does not require Treasury agreement since it does not give a commitment that such an engine will be required.

I said that Treasury agreement is needed for this announcement because it would commit the Government to the Rolls option - in the event that the requirement was identified. It is a fundamental part of consultation with the Treasury about a procurement decision that our officials examine with yours the merits of a range of options for fulfilling the requirement in terms of relative risk, performance and contract terms. A commitment now to the Rolls option would prejudice this assessment.

As I mentioned, the Prime Minister's recent response to the proposals for a replacement for the Challenger tank underlined that, when considering proposals for procurement decisions, Ministers should be given a full range of options relating to the identified requirement.

Yours

Carys Evans

MISS C EVANS
 Private Secretary



Minister of State
for Defence Procurement

D/MIN(DP)/DGT/3/2/2

MINISTRY OF DEFENCE
WHITEHALL LONDON SW1A 2HB

Telephone 01-218 6621 (Direct Dialling)
01-218 9000 (Switchboard)

CHIEF SECRETARY	
REC.	- 9 SEP 1988
ACTION	Mr Kobson
COPIES TO	Cy Mr Hudson

9 September 1988

[note from Steve Kobson behind]

gk below

Dear John,

I thought that in the light of the points made in your PS's letter, I should write to you personally to say that I will be going ahead with our plans to make an announcement regarding the RTM 322 engine at Farnborough today. In doing so I am taking care to ensure that we are not thereby committing ourselves to buy an uprated engine, nor making any final commitment to Rolls-Royce/Turbomeca. Indeed, MOD has no commitment to purchase and the competition was conducted only after both bidders had been given a clear understanding that MOD had no immediate intention of placing orders following the competition because we had, as yet, no endorsed requirement for a more powerful engine. This has been clearly reflected in our announcement. *[not attached!]*

We initiated our enquiries with companies in order to clear the air over our future plans with regard to possible contenders for an uprated engine if such a requirement were to materialise. In the event, both Companies responded very vigorously to the challenge of competition and after repeated rounds of bidding, Rolls-Royce submitted an offer which was assessed in all respects to be the best.

/ Rolls-Royce ...

The Rt Hon John Major MP

Rolls-Royce have received development funding from HMG for this programme, and sought an early decision in order to help them launch their new engines on a very competitive world market. It seems clearly to be in the best interest of "UK Limited" that they should receive whatever assistance we are able to offer in this way, short of making a firm commitment to them.

*Yours,
David.*

Lord Trefgarne

As I had delete para 4. I recall to MOD. MOD APPROVE. I have you happy with what is proposed at para 9? [in its own way a breach of confidentiality] mpr

As I recall to MOD. MOD APPROVE. I have you happy with what is proposed at para 9? [in its own way a breach of confidentiality] mpr

CHIEF SECRETARY

ROLLS ROYCE

FROM : S A ROBSON
DATE : 12 SEPTEMBER 1988

c.c. Chancellor
Mr Anson 4370
Mr Evans 4815
Mr Tyrie

This submission recommends you write to Lord Trefgarne making clear that the Treasury is in no way committed by his announcement last week on helicopter engines.

2. The background is familiar to you. Westlands are developing a new helicopter for the MOD - EH101. The basic engine will be supplied by General Electric (GE) of USA.

3. The helicopter will have a number of variants and, for some of these, MOD may want a higher powered engine. MOD are not certain they will want these variants as some off-the-shelf helicopters appear cheaper. As a contingency. MOD have been looking at two candidate engines - another GE engine and a Rolls engine.

4. MOD wanted to announce that Rolls was their preferred choice. We objected on the grounds that :

- (a) we had seen no material to support this view. If MOD did decide they wanted an engine of this sort, it would cost some £450 million. Such a decision would need Treasury approval and we would want to satisfy ourselves that the right option had been chosen;
- (b) MOD had not agreed contract terms with Rolls other than the price. If GE were removed from the competition before terms were agreed, the terms would inevitably be less satisfactory;
- (c) there was no need to take a decision now. The only reason was to help Rolls marketing effort overseas.

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5. Lord Trefgarne wrote to you on 9 September saying that, despite your reservations, he was going ahead with the announcement. He said the announcement would not commit MOD to the purchase the engine. This is strictly true as regards the MOD release but not the Rolls one (see attachment). More importantly he failed to deal with any of the above points.

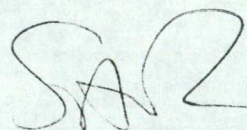
6. As soon as the letter arrived, Miss Evans phoned MOD (11.30am on September 9) and told Lord Trefgarne's office not to issue any press release. Despite this the release went ahead.

7. This is deeply unsatisfactory. MOD must not be allowed to get away with this or we shall have no end of trouble in future. That said, there are limits to what we can do. I have two proposals.

8. First, we must make clear that the Treasury does not consider itself committed to, or constrained by, the MOD announcement. If MOD do decide to procure an engine of this sort, we shall want to consider both the GE and Rolls options on their merits and will require from MOD all the information necessary to do this. You may like to know that we understand Westlands would prefer the GE engine.

9. Second, Sir Francis Toombes apparently told the Chancellor that he had seen correspondence between the Treasury and MOD on this subject. If this were true it would represent a breach of security. Lord Trefgarne should be asked to establish whether this is true. This will no doubt come to nothing but will make life a bit uncomfortable for him.

9. I attach a draft.



S A ROBSON

CONFIDENTIAL

DRAFT LETTER TO LORD TREFGARNE

ROLLS ROYCE HELICOPTER ENGINES

Thank you for your letter of 9 September.

2. I was surprised and disappointed that you went ahead with the press release despite the fact I opposed it. You had my private secretary's letter of 6 September. In the light of your letter of 9 September, my office contacted yours on the morning of 9 September to make clear that my objections stood.

3. In these circumstances I am sure you will appreciate that, if MOD does in due course approach the Treasury seeking approval for expenditure on an engine of this sort, the Treasury will wish to consider fully at all the options and reach a view in the light of their relative merits. This will require a similar level of information on each of the options. This would mean the Treasury would consider the GE engine as no less an option than the Rolls one.

4. There is a further point I should mention. Sir Francis Toombes mentioned this issue to Nigel Lawson last week. Sir Francis's comments could be taken to imply that he had seen correspondence between our departments on this subject. It would, of course, be a matter of considerable concern if this were the case. I would be grateful if you could have the position investigated and let me know the outcome.

J M

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MINISTRY OF DEFENCE NEWS RELEASE

Issued by: Public Relations (Centre), Ministry of Defence, Main Building, Whitehall, London, SW1A 2HR. Tel: 01-218 7924/7931



61/88

September 9, 1988

RRTM WIN MOD ENGINE COMPETITION

The Anglo-French engine company Rolls-Royce/Turbomeca (RRTM) have won a competition with General Electric Aircraft Engines (GE) and have been nominated by the Ministry of Defence as the preferred supplier if more powerful production engines are needed in EH101 aircraft.

The Ministry stresses that no orders will be placed immediately because the need for an updated engine has not yet been fully established and any eventual orders would only follow the negotiation of satisfactory contractual terms and conditions.

It is expected that the Government's selection of the RRTM family of engines as the winner of a closely fought open competition will give them an important springboard for their maker's attack on world markets, where substantial orders stand to be won over the next few years.

Commenting on the selection Lord Trefgarne, Minister of State for Defence Procurement, said "Both companies fought very hard and our selection was made only after a very thorough evaluation of all aspects of their bids. The winning company put in the best and overall lowest bid. The price reduction that we secured through repeated rounds of bidding demonstrated once again the benefits of competition in obtaining value for money in defence procurement."



Press Information

RTM322 CHOSEN FOR EH101

9 September 1988

Rolls-Royce is pleased to announce that the Anglo-French engine company, Rolls-Royce Turbomeca Limited, has been informed by the Ministry of Defence that its RTM322 has won the competition against the GE company of the United States for the supply of production engines for the proposed Ministry of Defence purchase of EH101 helicopters.



1. Jovelle
2-BF 19/9

MO 26/4/2/1L

pmf

CH/EXCHEQUER	
REC.	12 SEP 1988
ACTION	CST
COPIES TO	

✓ 12/9

PRIME MINISTER

A NEW TANK FOR THE ARMY

I have seen your Private Secretary's letter of 11th August recording your views on my minute of 4th August and the comments of Peter Lilley (10th August), Lynda Chalker (11th August) and David Young (16th August).

2. In view of your wish that the options should not be artificially limited at this stage, I will ensure that the seven options identified in my earlier minute are addressed in the further report to OD in which I shall make my final recommendation. To meet Peter Lilley's concern, that report will also address the possibility of retaining an improved CHIEFTAIN in service, though for the reasons given in paragraph 2 of my earlier minute I regard that option as a non-starter. (If CHIEFTAIN were to be improved and retained in service until 2015, the earliest date by which it could be fully replaced by a new technology tank, it would then be 50 years old). The operational analysis arguments, which in the interests of brevity were omitted from my earlier minute, will be covered in my further report. As Peter Lilley recognises, the picture conveyed by the summary in his fourth paragraph is based on incomplete material; it does not in my view represent a valid conclusion.

3. I note that Lynda and David have expressed rather different views on the two issues raised in paragraph 17 of my minute. They have made a number of useful comments which will be taken into account in my Department's further study. Meanwhile, I take it that the consensus of colleagues is that we are prepared to contemplate



buying a foreign tank if that should appear the best course in the light of all the argument.

4. David suggested there was an inconsistency in my account of American intentions. This is not the case. In paragraph 9a, I was describing present American plans to convert the last of their tanks with 105mm guns to 120mm. At about the same time, the large calibre conventional gun would start to be phased into service. Full deployment would take several years and the 120mm gun would be in service side by side with the large gun during that time.

5. I am copying this to OD colleagues and to Sir Robin Butler.

A.Y.

Ministry of Defence

9 September 1988

B/F CST bilateral

CONFIDENTIAL

FROM: A G TYRIE
DATE: 16 September 1988
cc: PS/Chief Secretary
Mr Robson
Mr Evans
Mr Cropper
Mr Call

22/11

MISS WALLACE

ROLLS ROYCE

Your minute of 12 September asks for a draft reply for the Chancellor to send to Sir Francis Tombs.

- 2. I am not sure that the Chancellor need write to him. If he does I think it should be short, along the lines attached.

Act.

A G TYRIE

Ch/ I also wonder whether you need write. Do you want to? If so, draft ok?
See also proposed letter for CST → Yanger, behind.

mpw



In the case, no approval by Sir.

DRAFT LETTER FOR THE CHANCELLOR TO SEND TO SIR FRANCIS TOMBS

After dinner last week at the Cafe Royal you asked if I could look into the clearance of a press release MOD and yourselves were intending to put out on engines for the EH101 helicopter.

2. I gather that the following day these releases were put out, as you had wanted.

tank.16

Handwritten initials

FROM : S A ROBSON
DATE : 16 SEPTEMBER 1988

PS/CHIEF SECRETARY

c.c. PS/Chancellor
Mr Anson
Mr Sutton
Mr Call

A NEW TANK FOR THE ARMY

There is no need to respond to Mr Younger's minute of 9 September to the Prime Minister. Mr Younger has taken our main point - that the retention of Chieftain should be one of the options addressed.

SAR

S A ROBSON

62279

FROM: J W STEVENS

DATE: 26 September 1988

PS/CHANCELLOR 12/2

cc. PS/Chief Secretary
Sir P Middleton
Mr Monck
Mr Burgner
Mr Waller

*Ch. Content for me to
reply as suggested?*

29/9 gk -

BOTB REPORT 1987-88

We had a word about Sir James Cleminson's letter of 16 September covering a copy of the British Overseas Trade Board's Annual Report for 1987-88. We agreed that there was no need to provide a note for the Chancellor. Since we spoke I have received a further copy of the Report which was sent to the Chief Secretary. On the assumption that it would be regarded as impolite to reply to both in a single acknowledgement I attach 2 short draft Private Secretary letters.

J W STEVENS

Pre type final

DRAFT LETTER FROM PS/CHANCELLOR TO SIR JAMES CLEMINSON

The Chancellor of the Exchequer has asked me to thank you for sending him a copy of the British Overseas Trade Board's Annual Report for 1987-88, which he found most interesting.

JMG T

JONATHAN TAYLOR
(Private Secretary)

DRAFT LETTER FROM PS/CHIEF SECRETARY TO SIR JAMES CLEMINSON

The Chief Secretary has asked me to thank you for sending him a copy of the British Overseas Trade Board's Annual Report for 1987-88, which he looks forward to reading.

CARYS EVANS
(Private Secretary)

EFFECTS OF
PIPER ALPHA
DISASTER.

CONFIDENTIAL

FROM: GUS O'DONNELL

DATE: 14 OCTOBER 1988

CHANCELLOR

cc: Chief Secretary
 Financial Secretary
 Paymaster General
 Economic Secretary
 Sir P Middleton
 Sir T Burns
 Mr Scholar
 PCC
 MEG
 Mr Odling-Smee
 Mr Edwards
 Mrs Lomax
 Mr Luce
 Mr Moore
 Miss Peirson
 Mr Riley
 Mr S Davies
 Mr Grice
 Mr Hibberd
 Mr Matthews
 Mr Melliss
 Mr Mowl
 Mr Hibberd
 Mr O'Donnell
 Mr Pickford
 Mr Williams
 Mr Dolphin
 Ms Goodman
 Ms Turk
 Mr McLaren
 Mr Tyrie
 Mr Call

Ch
 Contact to write up
 proposal ?
 OK with
 26
 4/10
 ✓

PS/Inland Revenue

Mr Calder)
 Mr Parker) I/R

PIPER ALPHA : ECONOMIC CONSEQUENCES

1. Mr Parkinson wrote to you on 19 September giving his latest estimates of the consequences of the Piper Alpha disaster. A copy of the letter is attached. His officials have now provided us with more detailed information on changes to North Sea oil production and investment which have been incorporated in the attached paper on the effects of the Piper Alpha disaster. The paper takes into account the

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insurance and extra safety investment effects mentioned at the end of Mr Parkinson's letter. As a result of this and other changes described in the paper, the losses in government revenues and on the current balance are different from those originally given by the Department of Energy (D.En). (The adverse effects on the current account are now estimated at £300 million in 1988 and £390 million in 1989.) D.En have not as yet had the chance to approve these figures.

2. In his letter Mr Parkinson says that the figures he has provided are for "internal HMG purposes only". D.En are anxious that detailed estimates of the safety-related losses are not made public as the figures are subject to particularly wide margins of error and they do not want to appear to be prejudging the results of the various inquiries into the disaster. I think that we will almost certainly have to be ready to provide some estimates of Piper Alpha effects at the time of the Autumn Statement, though not necessarily in the text of the Industry Act Forecast. It would be worthwhile reminding Mr Parkinson of this, and this is the main purpose of the attached draft reply to his letter.

Gus O'Donnell

A T O'DONNELL

DRAFT LETTER TO MR PARKINSON

PIPER ALPHA: ECONOMIC CONSEQUENCES

1. Thank you for your letter of 19 September 1988 describing the likely economic consequences of the Piper Alpha disaster. I would appreciate being kept up to date with any new or revised figures on the effects of the disaster.

2. I note that you say that the figures you provide of the effects on Piper Alpha are for internal HMG use. We will, however, have to be prepared to give some estimates of the ^{overall} effects when I publish a new Industry Act forecast at the time of the Autumn Statement. My officials will as usual show the relevant sections of the Industry Act forecast and our briefing to your officials nearer the time.

[N.L.]

ECONOMIC SECRETARY

REC'D 21 SEP 1988

~~Mr Odling-Smee~~
RS/KHK RS/KST
RS/KST RS/PHG
Sir R Middleton
Mr Scholer



19 SEP 1988
EST

SECRETARY OF STATE FOR ENERGY

THAMES HOUSE SOUTH
MILLBANK LONDON SW1P 4QU

01 211 6402

Mr Moore

Ms Goodman

RS/IR

Mr Sedgwick

Sir T Burns

Mr Byatt

The Rt Hon Nigel Lawson MP
Chancellor of the Exchequer
Treasury Chambers
Parliament Street
LONDON
SW1P 3AG

19 September 1988

Dear Nigel,

PIPER ALPHA: ECONOMIC CONSEQUENCES

In my report to Cabinet on 28 July where I dealt with the wider economic consequences of the Piper Alpha disaster, I indicated that the operator, Occidental, was revising its views on the amount of oil production likely to be lost in 1988 and 1989. (NB All references are to calendar years). Occidental has now informed my Department that it intends with Texaco, the operator for the Tartan field, to install emergency shutdown valves in all the oil and gas pipelines servicing the Tartan, Claymore and other fields associated with Piper. Occidental also intends to conduct a full review of the operations and safety systems on its Claymore field.

The effect of these changes is to increase the overall loss of oil production in 1988 to 6.6 million tonnes (previously 4.2 million tonnes): the estimated loss in 1989 remains as previously at 4.2 million tonnes. My economists estimate that the gross value of oil lost in 1988 is likely to amount to some £450 million and that the loss to the balance of payments and in Exchequer receipts over the whole period to end 1989 could amount to £500 million and £415 million respectively. These estimates take no account of insurance claims by licencees: such claims are likely to reduce both the tax and balance of payments losses indicated above. The oil lost in 1988 and 1989 is likely to be fully recovered later on in field life (including Piper which we expect eventually to be redeveloped).

It is much too early for my Department to provide any reliable estimates of the wider implications for production and costs likely to arise from changes in safety procedures until after the Public Inquiry. But I recognise that you need to take account of the possibility of such consequences in your Autumn assessment of the economy. My petroleum specialists and economists have therefore given some careful thought to the sort of 'ball-park' figures which it would be appropriate to include in your North Sea forecast. Their assessment is that a further 4 million tonnes of oil could be lost over the period 1989 and 1990 due to



fields extending their maintenance period or having to cease production whilst installing emergency shutdown valves or similar isolation facilities. It is thought that this lost oil will probably be recovered by 1992. The capital costs of these measures is, at present, equally uncertain. My officials current best estimate is for a cost of £600 million spread over the period 1989 to 1992, with peak expenditure in 1990.

My officials will be pleased to explain to your economists the details and background thinking behind these numbers which should be used only for internal HMG purposes.

*Yours Sincerely,
Cecil Parkinson*

CECIL PARKINSON

THE EFFECTS OF THE PIPER ALPHA DISASTER

1. This note outlines the economic consequences of lost production and increased investment as a result of the Piper Alpha disaster. Latest estimates of production losses and increased investment have been supplied by the Department of Energy (D.En) which, combined with the latest Treasury forecast of oil prices, have allowed Inland Revenue to calculate the effect on government revenues. Figures for the effect on the balance of payments are also shown.

2. These latest estimates differ from those originally given by D.En for the period to end. This is due to an assumed lower oil price and the effects of probable extra safety measures and insurance payments.

Production and Investment Effects

3. The oil production losses are expected to decline steadily while the expenditure to replace Piper Alpha and to improve general safety in the North Sea is predicted to be greatest in 1990 and 1991. (The loss of gas production is expected to be negligible as the useful output from the affected fields is almost entirely oil.) The production losses are much greater, and last longer, than originally expected by D.En, partly because they now expect increased safety measures to cause further reductions in output. Piper Alpha is presently expected to resume production in 1992.

TABLE 1 : EFFECTS OF PIPER ALPHA ON NORTH SEA PRODUCTION AND INVESTMENT

	1988	1989	1990	1991	1992	Total 1988-92
OIL production (millions of tonnes)						
Loss from Piper Alpha	-6.6	-4.2	-2.8	-2.1	-0.5 or less	-16.2
Contingencies for reduced production due to safety measures	-	-2.0	-2.0	-	-	-4.0
Total	-6.6	-6.2	-4.8	-2.1	-0.5 or less	-20.2
INVESTMENT (£mn)						
Piper Alpha replacement	-	+30	+110	+150	+90	380
Extra safety work	-	+100	+250	+150	+100	600
Total	-	+130	+360	+300	+190	980

4. The information in Table 1 (which can be split down field by field) has been incorporated in the current forecasting exercise. It is therefore possible to give up to date estimates of the effects of the disaster on the current account and government revenues from the North Sea. Our calculations assume that the average North Sea oil price rises from its current level of around \$12½ per barrel to \$14 by mid-1989 and then remains at this level until 1991.

(i) North Sea Revenues

5. Table 2 shows estimates of the revenue foregone as a result of the lost production and increased investment to replace Piper Alpha and improve safety. The size and, particularly, the timing of the estimated increases in investment are subject to wide margins of error.

TABLE 2 : EFFECTS OF THE PIPER ALPHA DISASTER ON GOVERNMENT REVENUES

(£ million, (-) denotes less revenue)

	1988/89	1989/90	1990/91	1991/92	1992/93	1988/89 to 1992/93
Due to lost production	-160	-200	-140	-70	0	-570
Due to Piper Alpha insurance/investment	250	-20	-30	-70	0	+130
Due to extra safety measures	-	-150	-220	-60	-60	-490
TOTAL	+90	-370	-390	-200	-60	-930

(D.En estimate -415 to end of 1989)

6. Table 2 includes the impact of possible receipts of insurance claims. The companies are likely to receive substantial payouts in this financial year on Piper Alpha insurance policies and tax on these receipts, under existing legislation, will be payable immediately at a very high marginal rate. Having spoken with the oil companies involved, Inland Revenue estimate that an extra £¼ billion of PRT may be received in 1988/89. Hence, paradoxically, North Sea revenue could be on balance some £90 billion higher this year as a result of the disaster. However, the increase in receipts from insurance payments in 1988/89 will be more than offset in later years as extra (tax-deductible) investment on rebuilding Piper Alpha and on extra safety measures reduces taxable income and, in turn, government receipts.

(ii) Effects on current account

7. Table 3 shows our estimates of the effects on the current account of the lost Piper Alpha production at the oil prices used in the current forecast (see para 3). The current account effect is defined as:

(a) the value of lost production (which reduces exports and/or increases imports),

less (b) an estimate of the change in profits due abroad to oil companies.

TABLE 3 : CURRENT ACCOUNT EFFECT OF THE PIPER ALPHA DISASTER

	(£ million)					Total
	1988	1989	1990	1991	1992	1988-92
(a) Value of lost production	-400	-380	-300	-140	-30 or less	-1250
(b) Change in profits due abroad (-=improvement in invisibles balance)	-100	+10	+140	+120	+30	+200
Total current account effect ((a)-(b))	-300	-390	-440	-260	-60 or less	-1450

(D.En estimate: -500 to end 1989)

8. The estimates do not take account of either the import content of the extra investment or the extent to which the insurance claims will be met by UK companies (ie the figure above assumes that Piper Alpha was insured with overseas companies who did not reinsure with UK companies). Exact details of the insurances and possible reinsurance arrangements are not known. To the extent that the claims are met by UK companies the effect on the current account would be worse than is shown in Table 3.

9. As you would expect, the disaster results in a fall in profits due abroad in 1988. In later years, however, foreign companies net of tax profits are expected to be higher than they would have been. This is because increased capital flows, which finance the extra investment needed, generate additional tax allowances while much of the value of the lost production is offset by lower PRT payments. Overall, the adverse effect after 1988 on the current account is greater than the value of lost production.

Conclusion

10. It is worth emphasising again that most of the figures given in this note are subject to quite wide margins of error, both in size and timing. This is particularly true for extra safety investment in the North Sea where D.En are guessing the outcome of a public enquiry. Having said that, it is clear that over the forecast period losses will be suffered both in government revenues and on the balance of payments as a result of the Piper Alpha disaster. Most of these losses will be made good in the long run, as oil-field lives are extended, and are relatively small in comparison with the present forecast of current account deficits and gross revenue receipts.

POST-MORTEM
ON THE FSBR
FORECAST.

CONFIDE

FROM: D W OWEN
DATE: 14 OCTOBER 1988

CHANCELLOR OF THE EXCHEQUER

cc Chief Secretary
Financial Secretary
Paymaster General
Economic Secretary
PCC
MEG
Mr Pickford
Mr Hibberd
Mr O'Donnell
Mr Davies
Mr Melliss
Mr Riley
Mr Call
Mr Tyrie

POST-MORTEM ON THE FSBR FORECAST

I attach a note which compares the 1988 FSBR forecast with the latest available data and with our current view of the probable outturns, based on the autumn internal forecast results. It also discusses the likely errors in relation to the record of errors from previous published forecasts.

David Owen

D W OWEN
EA1

POST-MORTEM ON 1988 FSBR FORECAST

The 1988 FSBR forecasts of the current account and inflation in 1988, and the PSBR in 1988-89 are bound to prove wrong by large margins. This note compares the 1988 FSBR forecast of the main published series with latest data and the autumn internal forecast. It also compares these errors with previous errors on published forecasts (set out in detail in the annex).

2. It is hard to assess the relative importance of errors on different variables. But a crude 'Golden Guru' style measure of forecasting performance, calculated by summing the percentage errors on GDP, the RPI, the current account and the PSBR, suggests that, if the autumn forecast is correct, the 1988 FSBR forecast will be the worst since we first published forecasts at the present level of detail, in autumn 1976.

Background

3. The Treasury first published an economic forecast for the year ahead in the 1968 FSBR. Previous FSBRs had only included projections of the PSBR. The early economic forecasts were limited to the outlook for real GDP and the main expenditure components. The 1975 Industry Act required the Treasury to publish two forecasts a year, starting from autumn 1976. At the same time the coverage of the forecasts was increased to include the RPI and the balance of payments current account. Explicit forecasts of money GDP and the GDP deflator were not introduced until 1982.

4. The Industry Act also included the following passage relating to the analysis of forecasting errors:

'Any forecast ... shall indicate, where possible, the margin of error attaching to it.'

The Treasury shall, from time to time publish an analysis of errors in such forecasts that would have remained even if the assumptions set out in the forecasts and on which they were based had been correct.'

5. Until recently the margins of error published with the forecasts were based on average errors from past forecasts (published and unpublished), after making allowances for policy changes. In the last FSBR, however, we based margins of error only on published forecasts over the past ten years, making no allowance for policy changes. We propose to maintain this method in future, and the historical errors in

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the annex will be the basis for the margins of error to be published in the Autumn Statement and the FSBR.

6. We have not recently published the more thorough, but occasional, analysis of errors required by the Industry Act, so one will probably be necessary soon. However, in view of the likely size of the recent forecast errors, it would be hard to justify the publication of such an article before outturn data allow a proper assessment of 1988. But after the 1989 Budget, when we will have the first complete national accounts and balance of payments estimates for calendar 1988, we could prepare a draft EPR article. Alternatively we could wait for the 1989 Blue Book.

Comparison of 1988 FSBR forecast with latest evidence

(i) Output and expenditure

7. Growth in the average measure of GDP is now expected to be around 4 per cent in 1988, compared with the FSBR forecast of 3 per cent. An error of 1 percentage point is in line with the historical average for FSBR forecasts, and is the same as the error made in the 1987 FSBR (Table A1).

Table 1: Output and expenditure growth in 1988 (per cent)

	<u>FSBR forecast errors*</u>		Average error from past FSBR forecasts**	Previous large errors
	1988H1 on 1987H1	Based on autumn forecast 1988 on 1987		
(i) Domestic demand growth	+0.3	+2.0	1	-2.2(1972) -2.6(1975) +2.1(1979) +1.7(1983)
(ii) Exports of goods and services	-3.4	-1.9	2	
(iii) Imports of goods and services	+2.8	+5.2	2½	
(iv) GDP(A)	+0.2	+1.0	1	-2.3(1972) -2.2(1975) +2.4(1979) +1.7(1983)

* Outturn/latest estimate minus forecast

** Average absolute error from published forecasts over past ten years.

8. Inconsistencies in the national accounts between the three measures of GDP mean that this revision cannot be explained in terms of expenditure components - GDP(E) growth in 1988 is now expected to be ½ point less than forecast in the FSBR. Much of the upward revision to

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the average measure reflects stronger than expected growth in output. GDP(E) growth is probably being under-recorded, and if, as we expect, it is revised up in the future, the error on our forecast of GDP(A) could be even larger.

9. Despite probable underrecording of expenditure, domestic demand growth in 1988 is likely to be 6 per cent compared to 4 per cent in the FSBR. This would be close to the largest error since the 2½ per cent error in 1975, the worst on record (Table A2). In absolute terms it is accounted for roughly equally by underestimates of consumption and investment, though proportionately the underestimate of investment is larger. The effect on GDP(E) has been more than offset by a much larger negative contribution of net trade than expected, largely a result of the under-prediction of domestic demand.

(ii) Current account

10. Errors in the net trade forecast are reflected in the forecasts of the current account deficit.

Table 2: Current account in 1988

	<u>FSBR forecast errors</u>		Average error from past FSBR forecasts	Previous large errors
	Based on Jan-Aug at annual rate	Based on Autumn forecast		
£ billion	-9.8	-9.8	3	
Per cent of money GDP	-2.1	-2.1	½	+2.6 (1980) +1.5 (1981)

11. The forecast deficit for 1988 has been revised from £4 billion in the FSBR to nearly £14 billion in the Autumn forecast. The FSBR forecast error could, therefore, be 2 per cent of GDP. This compares with an average historical error of ½ per cent. It is second only to the underprediction of the surplus in 1980 of 2½ per cent (Table A6). Forecasts of the current account were not published before the 1976 Autumn IAF, so we have no public record of errors around 1974-75, when the current account moved sharply into deficit on a scale similar to this year.

(iii) Inflation and money GDP

12. RPI inflation rose to 5.9 per cent in September. In the year to the fourth quarter of 1988 it is now expected to be 6½ per cent, compared to 4 per cent forecast in the FSBR. (The 1987 Autumn Statement forecast was 4½ per cent.) Around half this revision reflects

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higher than expected mortgage rates, but underlying inflation has also been substantially higher than expected. This could be the largest under-estimate of inflation we have ever published, (though we over-estimated by a larger amount in 1982).

Table 3: Inflation and money GDP

		Percentage points	
	Error based on Autumn forecast	Average error from past FSBR forecasts	Previous large errors
RPI (1988Q4 on 1987Q4)	+2.2	1	+1.9 (1981) -2.8 (1982)
GDP deflator (1988-89 on 1987-88)	+2.3	1	0.8 (1987-88)
Money GDP at market prices (1988-89 on 1987-88)	+3.5	1½	2.5 (1987-88)

13. The upward revisions to forecasts of real growth and inflation are reflected in the forecast of money GDP, which is now expected to grow by 11 per cent in 1988-89 compared with 7½ per cent in the FSBR. This is likely to be the largest error since we began publishing forecasts of money GDP in 1982.

(iv) PSBR

14. The PSBR forecast error for 1988-89 is likely to be around 1¼ per cent of GDP, similar to the error on the 1987-88 FSBR forecast but double the average of the past ten years. There were, however, several larger errors in the early and mid 1970s.

Table 4: PSBR in 1988-89

	Error based on Autumn forecast	Average error from past FSBR forecasts*	Previous large errors
£ billion	-8.6	4	
Percent of money GDP	-1.8	1	+1.9 (1970-71) +5.9 (1974-75) -2.8 (1976-77) -2.1 (1977-78) +1.7 (1980-81) -1.8 (1987-88)

* Based on forecasts over the past ten years. Average error in £ billion is based on average percentage error, applied to projected money GDP in 1988-89.

ANNEX: MARGINS OF ERROR ON PREVIOUS PUBLISHED FORECASTS*

Table A1 Gross domestic product (average measure) at constant factor cost

Forecast for:	FSBR			(Percentage change on year earlier) Autumn IAF		
	Forecast	Outturn	Error	Forecast	Outturn	Error
1968	3.0	4.1	1.1			
69	2.3	2.0	- 0.3			
70	3.3	1.7	- 1.6			
71	1.2	1.9	0.7			
72	4.7	2.4	- 2.3			
73	6.5	7.9	1.4			
74	- 1.1	- 1.7	- 0.6			
75	1.4	- 0.8	- 2.2			
76	2.5	2.7	0.2			
77	1.3	2.6	1.3	2.0	2.1	0.1
78	2.0	3.0	1.0	3.0	3.0	0.0
79	0.3	2.7	2.4	2.4	2.7	0.3
80	- 2.5	- 2.2	0.3	- 2.0	- 2.2	- 0.2
81	- 2.0	- 1.1	0.9	- 1.5	- 1.1	0.4
82	1.5	1.8	0.3	1.0	1.8	0.8
83	2.0	3.7	1.7	1.5	3.7	2.2
84	3.0	1.7	- 1.3	3.0	1.7	- 1.3
85	3.5	3.8	0.3	3.5	3.8	0.3
86	3.0	3.0	0.0	3.0	3.0	0.0
87	3.0	4.2	1.2	3.0	4.2	1.2
	Mean absolute forecast error (whole period)	1.1		Mean absolute forecast error (whole period)	0.6	
	" (last ten years)	0.9		" (last ten years)	0.7	

* The FSBR forecasts are made in the same year, whereas the Autumn Statement forecasts are made in the year before the forecast period - eg Autumn Statement forecast for 1987 was made in Autumn 1986

NOTE: The 1977 Autumn IAF forecasts are for 1976 H2 to 1977 H2, for all variables except RPI and current account balance.

Table A2 Domestic demand

Forecast for:	FSBR			(Percentage change on year earlier) Autumn IAF		
	Forecast	Outturn	Error	Forecast	Outturn	Error
1968	1.5	3.1	1.6			
69	0.9	- 0.2	- 1.1			
70	3.3	2.1	- 1.2			
71	2.1	2.6	0.5			
72	6.0	3.8	- 2.2			
73	6.6	8.4	1.8			
74	- 1.2	- 2.4	- 1.2			
75	0.7	- 1.9	- 2.6			
76	1.9	2.6	0.7			
77	0.4	- 0.4	- 0.8			
78	3.7	4.3	0.6	3.3	4.3	1.0
79	1.5	3.6	2.1	2.1	3.6	1.5
80	- 1.5	- 2.9	- 1.4	- 1.5	- 2.9	- 1.4
81	-1.1	-1.6	- 0.5	- 0.6	-1.6	- 1.0
82	3.1	2.3	- 0.8	2.7	2.3	- 0.4
83	3.2	4.9	1.7	2.2	4.9	2.7
84	3.4	2.6	- 0.8	3.3	2.6	- 0.7
85	2.8	2.7	- 0.1	3.7	2.7	- 1.0
86	3.5	3.8	0.3	3.3	3.8	0.5
87	3.5	4.3	0.8	3.5	4.3	0.8
	Mean absolute forecast error (whole period) 1.1			Mean absolute forecast error (whole period) 1.1		
	▪ (last ten years) 0.9			▪ (last ten years) 1.1		

Table A3 Consumers' expenditure

Forecast for:	FSBR			(Percentage change on a year earlier) Autumn IAF		
	Forecast	Outturn	Error	Forecast	Outturn	Error
1968	0.2	2.8	2.6			
69	- 0.2	0.6	0.8			
70	3.6	2.8	- 0.8			
71	3.6	3.1	- 0.5			
72	5.7	6.1	0.4			
73	5.1	5.1	0.0			
74	- 0.3	- 1.5	- 1.2			
75	1.8	- 0.5	- 2.3			
76	0.7	0.3	- 0.4			
77	- 0.4	- 0.5	- 0.1	- 2.0	0.0	2.0
78	5.0	5.6	0.6	3.4	5.6	2.2
79	2.9	4.2	1.3	2.8	4.2	1.4
80	0.9	0.0	0.9	0.5	0.0	- 0.5
81	- 1.0	0.0	1.0	- 0.5	0.0	0.5
82	0.5	0.9	0.4	0.0	0.9	0.9
83	2.5	4.4	1.9	2.5	4.4	1.9
84	3.0	1.8	- 1.2	2.5	1.8	- 0.7
85	3.0	3.5	0.5	3.0	3.5	0.5
86	4.0	5.4	1.4	4.0	5.4	1.4
87	4.0	5.1	1.1	4.0	5.1	1.1
	Mean absolute forecast error (whole period)		1.0	Mean absolute forecast error (whole period)		1.2
	▪ (last ten years)		1.0	▪ (last ten years)		1.1

Table A4 Fixed investment

Forecast for:	FSBR			(Percentage change on a year earlier) Autumn IAF		
	Forecast	Outturn	Error	Forecast	Outturn	Error
1968	5.2	6.3	1.1			
69	2.1	- 0.6	- 2.7			
70	3.1	2.5	- 0.6			
71	1.9	1.8	- 0.1			
72	5.9	- 0.2	- 6.1			
73	6.4	6.5	0.1			
74	- 3.0	- 2.4	0.6			
75	- 4.0	- 2.0	2.0			
76	- 0.5	1.8	2.3			
77	- 3.1	- 1.8	1.3	- 5.4	0.2	5.6
78	3.8	3.0	- 0.8	5.0	3.0	- 2.0
79	- 0.7	2.8	3.5	2.2	2.8	0.6
80	- 2.3	- 5.4	- 3.1	- 2.3	- 5.4	- 3.1
81	- 4.5	- 9.6	- 5.1	- 6.2	- 9.6	- 3.4
82	3.4	5.4	2.0	1.8	5.4	3.6
83	3.5	5.0	1.5	5.0	5.0	0.0
84	6.5	8.6	2.1	4.0	8.6	4.6
85	2.0	3.8	1.8	3.0	3.8	0.8
86	5.0	- 0.9	- 5.9	3.5	0.9	- 2.6
87	4.0	5.5	1.5	2.5	5.5	3.0
	Mean absolute forecast error (whole period)		2.2	Mean absolute forecast error (whole period)		2.7
	▪ (last ten years)		2.7	▪ (last ten years)		2.4

Table A5 Retail price index

Forecast for:	FSBR			(percentage change Q4 on Q4) Autumn IAF		
	Forecast	Outturn	Error	Forecast	Outturn	Error
1977	13.0	13.0	0.0	15.0	13.0	- 2.0
78	7.0	8.1	1.1	6.5	8.1	1.6
79	16.0	17.3	1.3	8.5	17.3	8.8
80	16.5	15.3	- 1.2	14.0	15.3	1.3
81	10.0	11.9	1.9	11.0	11.9	0.9
82	9.0	6.2	- 2.8	10.0	6.2	- 3.8
83	6.0	5.0	- 1.0	5.0	5.0	0.0
84	4.5	4.8	0.3	4.5	4.8	0.3
85	5.0	5.5	0.5	4.5	5.5	1.0
86	3.5	3.4	- 0.1	3.8	3.4	- 0.4
87	4.0	4.1	0.1	3.8	4.1	0.3
	Mean absolute forecast error (whole period)		0.9	Mean absolute forecast error		1.9
	▪ (last ten years)		1.0	▪ (last ten years)		1.8

Table A6 Current account balance

Forecast for:	FSBR				(£billion) Autumn IAF			
	Forecast	Outturn	Error*		Forecast	Outturn	Error*	
1977	- 0.5	- 0.2	0.3 (0.2)		- 1.5	- 0.2	1.3 (0.9)	
78	0.8	1.0	0.2 (0.1)		0.3	1.0	0.7 (0.4)	
79	- 0.8	- 0.5	0.3 (0.2)		- 0.3	- 0.5	0.2 (0.1)	
80	- 2.8	3.1	5.9 (2.6)		- 2.0	3.1	5.1 (2.2)	
81	3.0	6.9	3.9 (1.5)		2.0	6.9	4.9 (1.9)	
82	4.0	4.7	0.7 (0.3)		3.0	4.7	1.7 (0.6)	
83	1.5	3.8	2.3 (0.8)		0.0	3.8	3.8 (1.3)	
84	2.0	2.0	0.0 (0.0)		0.0	2.0	2.0 (0.6)	
85	3.0	3.3	0.3 (0.1)		2.5	3.0	0.5 (0.1)	
86	3.5	- 0.2	- 3.7 (1.0)		4.0	- 0.2	- 4.2 (1.1)	
87	- 2.5	- 2.5	0.0 (0.0)		- 1.5	- 2.5	- 1.0 (0.2)	
	Mean absolute forecast error (whole period)			(0.6)	Mean absolute forecast error			(0.9)
	▪ (last ten years)			(0.7)	▪ (last ten years)			(0.9)

* Errors as percentage of GDP in brackets

Table A7 PSBR

Forecast for	FSBR			Autumn IAF+		
	Forecast	Outturn	Error*	Forecast	Outturn	Error*
1967-68	1.5	2.0	0.5 (1.2)			
68-69	1.0	0.4	- 0.6 (- 1.4)			
69-70	- 0.3	- 0.6	- 0.3 (- 0.6)			
70-71	- 0.2	0.8	1.0 (1.9)			
71-72	1.2	1.0	- 0.2 (- 0.4)			
72-73	3.4	2.4	- 0.9 (- 1.4)			
73-74	4.4	4.3	- 0.1 (- 0.1)			
74-75	2.7	8.0	5.3 (5.9)			
75-76	9.1	10.3	1.2 (1.1)			
76-77	12.0	8.3	- 3.6 (- 2.8)	11.0	8.3	- 2.7 (- 2.1)
77-78	8.5	5.3	- 3.2 (- 2.1)	7.5	5.3	- 2.2 (- 1.5)
78-79	8.5	9.2	0.6 (0.4)	7.9	9.2	1.2 (0.7)
79-80	8.3	9.9	1.6 (0.8)	8.2	9.9	1.7 (0.8)
80-81	8.5	12.5	4.0 (1.7)	11.5	12.5	1.0 (0.4)
81-82	10.6	8.6	- 1.9 (- 0.8)	10.4	8.6	- 1.8 (- 0.7)
82-83	9.5	8.9	- 0.6 (- 0.2)	9.0	8.9	0.0 (0.0)
83-84	8.2	9.7	1.5 (0.5)	10.2	9.7	- 0.5 (- 0.2)
84-85	7.2	10.1	2.9 (0.9)	8.4	10.1	1.7 (0.5)
85-86	7.1	5.7	- 1.4 (- 0.4)	8.0	5.7	- 2.3 (- 0.7)
86-87	7.1	3.4	- 3.7 (- 1.0)	7.1	3.4	- 3.7 (- 1.0)
87-88	3.9	- 3.5	- 7.5 (- 1.8)	1.0	- 3.5	- 4.5 (- 1.1)
Mean absolute forecast error (whole period)			(1.3)	Mean absolute forecast error (whole period)		(0.8)
" (last ten years)			(0.8)	" (last ten years)		(0.6)

* Error as percentage of Money GDP in brackets

+ Relates to current financial year.

PO

FROM: GUS O'DONNELL

DATE: 17 OCTOBER 1988

CHANCELLOR

*Thanks
in this
to be in physical
part back of the
visible trade deficit
to do
Computations
x & n
John*

cc: Chief Secretary
Financial Secretary
Paymaster General
Economic Secretary
Sir T Burns
PCC
MEG
Mr Edwards
Mrs Lomax
Mr Luce
Mr Moore
Miss Peirson
Mr Sedgwick
Mr S Davies

Mr Grice
Mr Hibberd
Mr Matthews
Mr Melliss
Mr Mowl
Mr Pickford
Mr Riley
Mr Owen
Ms Turk
Mr Call
Mr Tyrie

THE TRADE DEFICIT AND CAPACITY CONSTRAINTS

1. The attached paper considers the importance of capacity constraints as a factor explaining the sudden deterioration in the visible trade deficit.

2. The main conclusion is that capacity constraints have probably increased imports and/or reduced exports in certain industries. There are, however, many industries that appear to have ample capacity and, unlike the situation in 1973, very few firms are reporting shortages of skilled labour. Some rough calculations suggest that even if all the error in our predictions of imports and exports were ascribed to capacity effects, these would only explain some £4 billion of the £14 billion current account deficit expected this year.

*Re Imports
Re some response to
the ex-ante dependence?
2. For ex-ante we have a
smaller
Re some
conclusion (iv). (the value 5)
What are x & n?*

Gus O'Donnell

A O'DONNELL

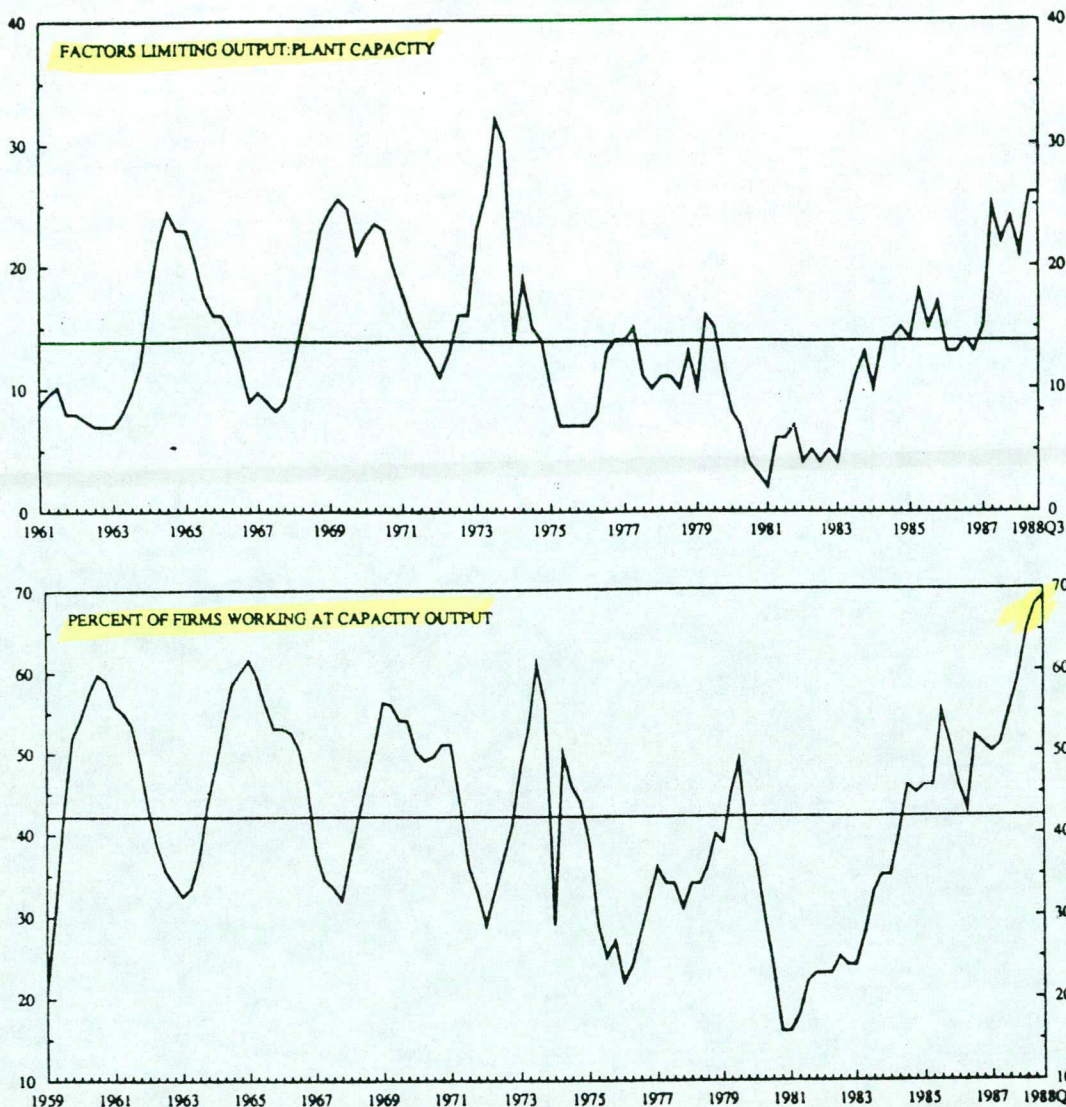
THE TRADE DEFICIT AND CAPACITY CONSTRAINTS

1. The recent deterioration in the trade balance could be due to a decline in UK competitiveness or might be the result of relatively high domestic demand spilling over into imports as a result of capacity constraints. In all probability both factors have played a part, but this note attempts to assess the validity of the capacity shortage explanation. It would, of course, be reassuring if the problem lay in insufficient capacity as the recent increase in investment in plant and machinery suggests that capacity will soon rise. It is also probable that the increases in interest rates will in time reduce domestic demand, allowing more output to be exported. On the other hand, if the problem is one of declining competitiveness, it may be some time before the reductions in demand offset the trade balance, assuming little change in the exchange rate.

2. This note uses disaggregated data because the level of capacity utilisation and the degree of import penetration vary significantly across industries.

I Capacity Constraints in total manufacturing

3. The importance of capacity constraints can be measured either by asking firms whether capacity shortages are important or by trying to estimate whether actual output is close to maximum potential output. The CBI industrial trends survey provides answers using the first approach. According to the latest survey, some 31% of firms are operating below full capacity. This is six percentage points below the cyclical peak observed in 1973. In the last six surveys the percentage reporting output below capacity has been falling suggesting that capacity constraints are getting more severe. Another survey question reveals that the proportion of firms reporting that orders or sales are a constraint on output has declined over the last year from around 70 per cent to 60 per cent. This evidence suggests that supply [side] factors have become more important over the last year relative to demand considerations. Firms are also asked whether plant capacity is an important constraint on output. In the July survey, however, only a quarter of firms reported that capacity was a constraint, compared with one third at the 1973 peak, and this percentage has not been increasing recently.

CHART 1: CBI INDICATORS OF CAPACITY UTILISATION
IN MANUFACTURING

4. It is perhaps not surprising that the answers to questions about capacity shortages are confusing as the importance of capacity constraints probably varies greatly between industries. The next section assesses data on selected industries to see whether areas of capacity shortage can be identified more clearly and whether imports have increased particularly sharply in such industries.

5. It is also possible that the responses to the survey may reflect respondents' impressions that are not very accurate. As a check, it is worth looking at direct estimates of capacity utilisation which measure actual relative to maximum potential output. The latter is difficult to measure but can be approximated by running a trend line through previous peak output levels. This method is not helpful for assessing capacity over long periods as output fell back considerably after the 1973 peak. It can be useful, however, for assessing shorter

Chart 2: Motor Vehicles & Parts

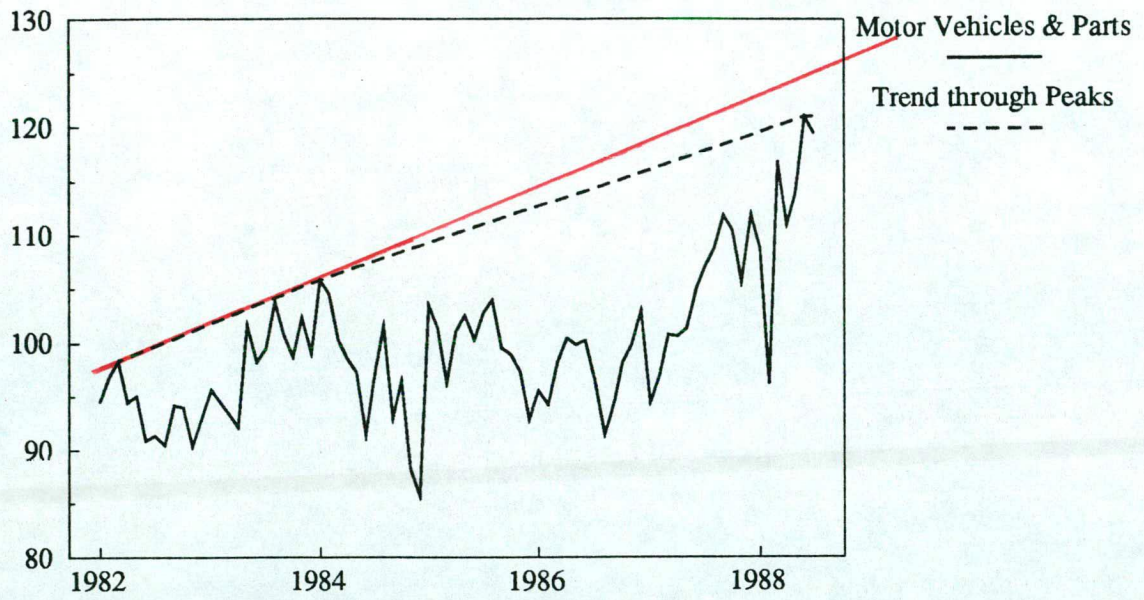


Chart 3: **Metal Goods (Engineering & Allied)**

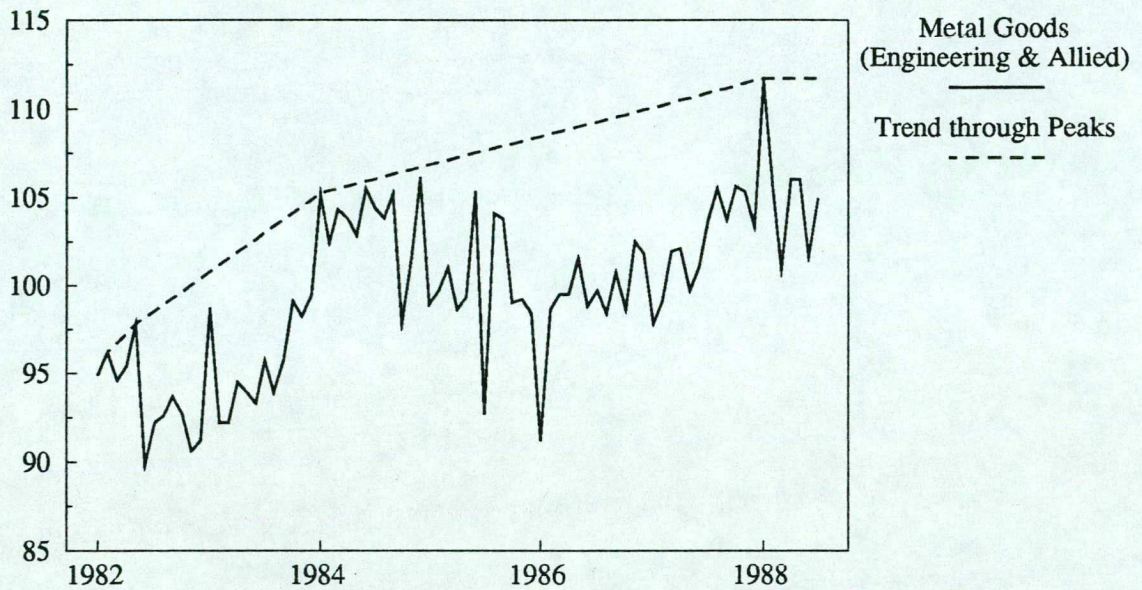


Chart 4: **Chemicals & Man-made Fibres**

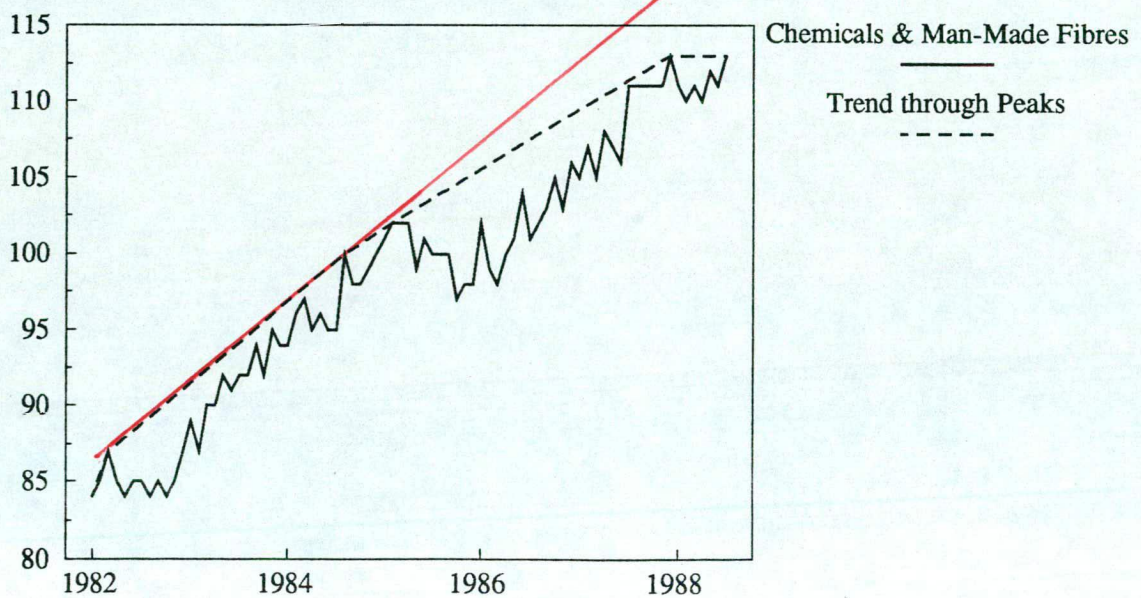


CHART 5: Intermediate Goods Output Relative to Trend

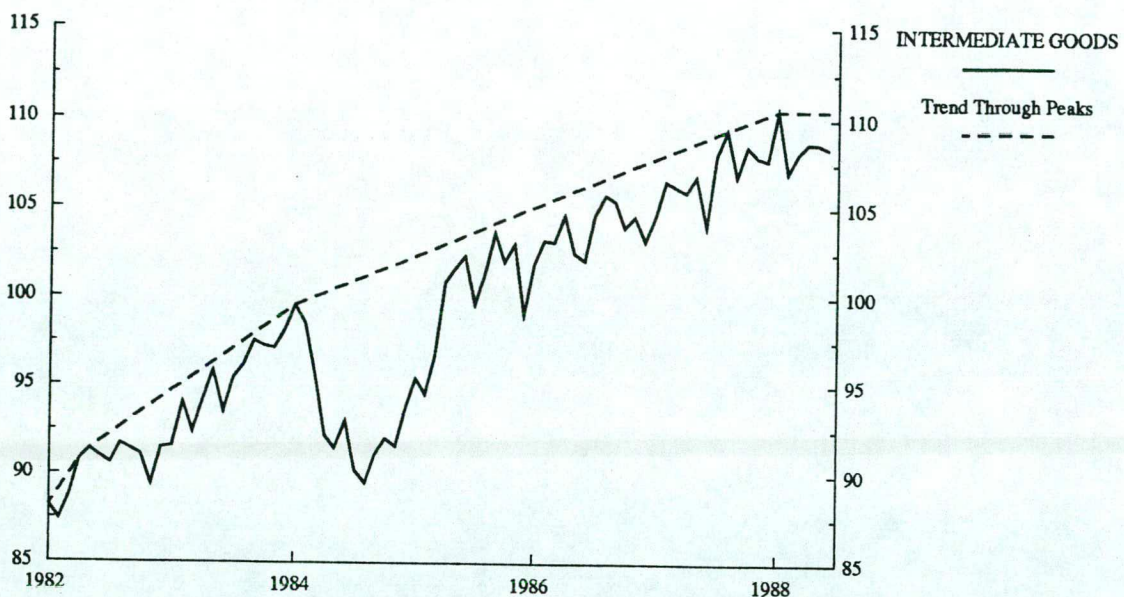


Chart 6: Paper, Printing & Publishing

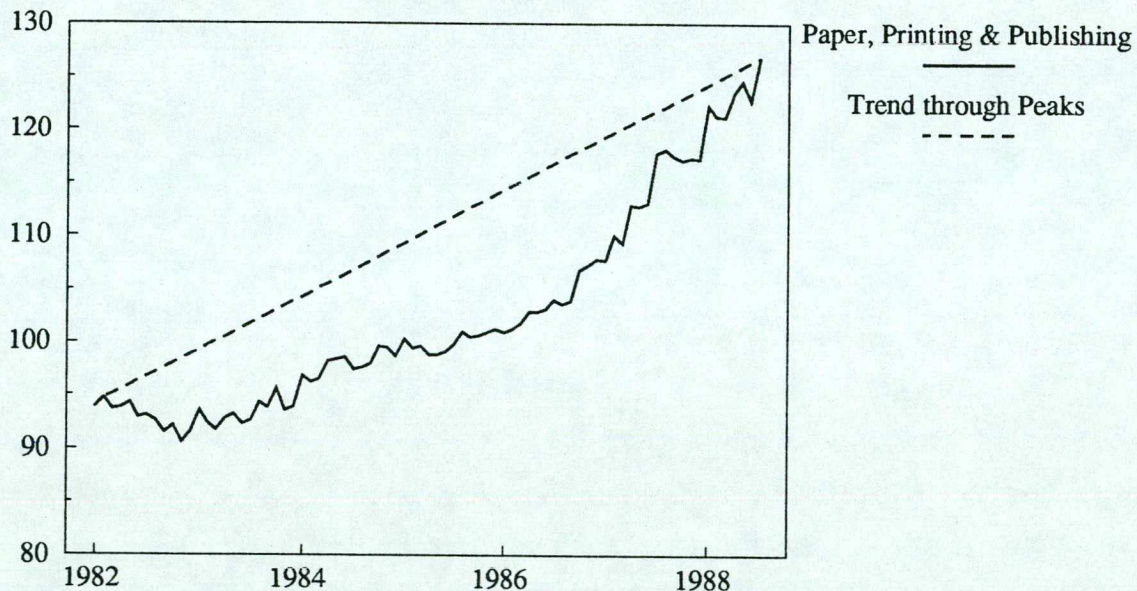
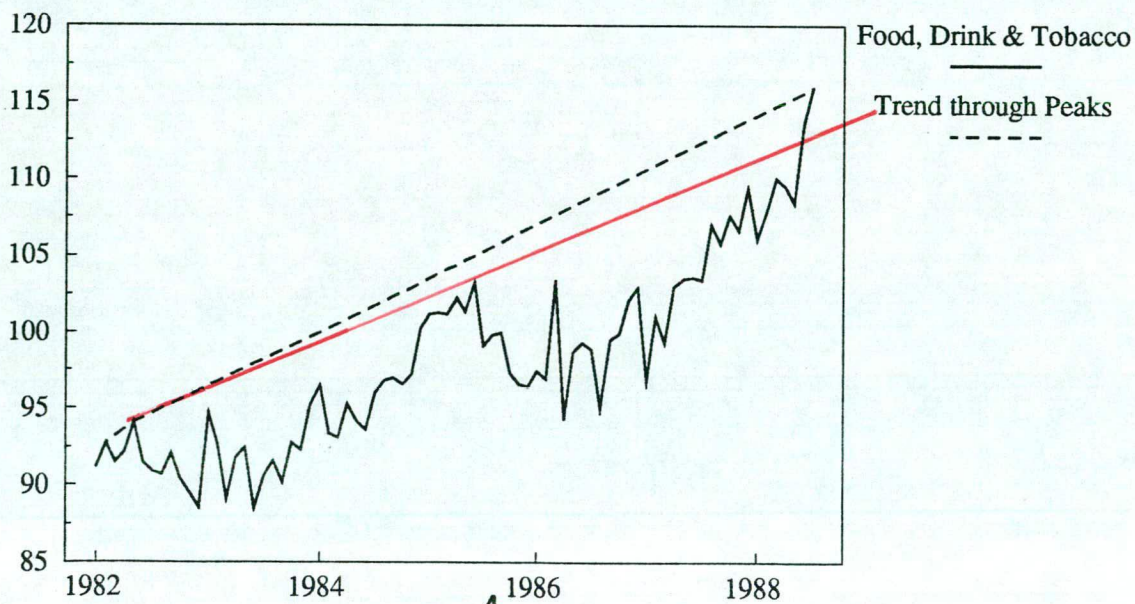


Chart 7: Food, Drink & Tobacco



run trends. Charts 2-7 show how actual output compares to a trend through peaks for various sectors over the period 1982-88. This objective evidence suggests that capacity constraints may well be severe in a number of industries, namely motor vehicles, chemicals and food, drink and tobacco, since total output is close to the trend line fitted through previous peaks.

Dependent on you fir!

II Summary of Sectoral Positions

6. The situation in a number of selected industries is summarised in Table 1. Annex A briefly describes what has been happening in each of these industries. If the only cause of the rise in the deficit were capacity constraints, all the industries would be expected to show the pattern displayed by the metal manufactures industry. High domestic demand has resulted in a high level of output growth, complaints of capacity shortage, insufficient output to devote to exports and a growing share of domestic demand being met by imports. None of the other industries exactly mirror this stereotype but there is evidence that capacity constraints may be resulting in higher imports in the chemicals and motor vehicles sectors.

Table 1: Output, Exports, Capacity Constraints and Imports in Selected Industries

(Based on performance over the last year and the latest CBI Survey)

	Output Growth	Export Growth	Degree of Capacity Constraint	Import Growth
Metal manufactures	High	Low	High	High
Chemicals	Low	High	High	Average
Food, drink and Tobacco	Low	Low	High	Low
Motor vehicles	High	Low	Mixed	High
Mechanical Engineering	Low	High	Mixed	Fairly High
Electrical Engineering	High	High	Low	High
Textiles	Low	Low	Low	Fairly High
Clothing and Footwear	Low	Low	Low	High

7. The strong growth in imports in clothing and footwear and the engineering industries, however, where capacity constraints do not appear to be important, suggests that shortage of capacity is not the main problem. In these cases the high level of imports may be due to the rise in sterling improving the price competitiveness of imports.

It may also reflect the absence of domestic suppliers for certain capital goods that are in high demand as a result of the investment boom. (Even in the United States, with its broad industrial base, many capital goods have to be imported as domestic capacity was severely reduced during the early eighties as a result of the overvalued dollar).

8. Table 2 summarises the impact on the visible deficit of trading performance in these selected industries. In all cases imports increased faster than exports over the last year. The sectors which have deteriorated most, when measured by the change in the (annualised) net trade balance expressed as a percentage of exports, are clothing and footwear and road vehicles.

(not checked ensuring on 2)

Table 2: Changes in net trade position of selected industries

	Change between Jan-Aug 1987 and Jan-Aug 1988 in:			Annualised Balance as % of exports in 1987 (3)
	Exports (1) (£mn, s.a, OTS basis)	Imports (2)	Balance (1)-(2)	
	%	%		
Metal manufactures	17 (1.7)	195 (16.4)	-178	17.6
Chemicals	82 (7.2)	607 (11.2)	-115	1.6
Mechanical Engineering	690 (10.6)	1205 (21.2)	-515	7.8
Electrical Engineering	1162 (17.7)	1326 (15.3)	-164	2.4
Road Vehicles	25 (0.8)	1521 (27.1)	-1496	46.0
Food, drink and tobacco	28 (-0.8)	291 (4.4)	-319	8.5
Textiles	74 (6.2)	164 (7.3)	-171	14.8
Clothing and Footwear	16 (1.5)	528 (22.8)	-512	47.2
Total Manufactures (excl. erratics)	3015 (8.4)	7099 (16.3)	-4084	11.1

Comparison with 1973-4

9. The last time that capacity constraints appeared to be as severe as they are now was the fourth quarter of 1973. In the following year the current account deficit peaked at £3¼ billion (or 3.8 percent of GDP) and the visibles deficit was around £5¼ billion (6.3 percent of GDP). In the forecast the current account and visibles deficits are expected to peak in 1989 at £14 billion (2.8 percent of GDP) and around £20 billion (3.9 percent of GDP) respectively. The ten industries reporting the largest proportion of firms constrained by

shortages of plant capacity in 1973Q4 and 1988Q3 are compared in Table 3. Four common industries appear in both lists: industrial and organic chemicals, ferrous and non-ferrous metals and glass and ceramics.

Table 3: Top ten Most Capacity Constrained Sectors: 1973Q4 and 1988Q3

Industry

Most Constrained in 1973Q4

Industrial and Organic Chemicals (75)
 Pulp Paper and Board Products (63)
 Ferrous Metals (53)
 Glass and Ceramics (53)
 Non-Ferrous Materials (53)
 Drink and Tobacco (42)
 Shipbuilding (37)
 Motor Vehicles (36)
 Food (34)
 Wool Textiles etc (33)

Most Constrained in 1988Q3

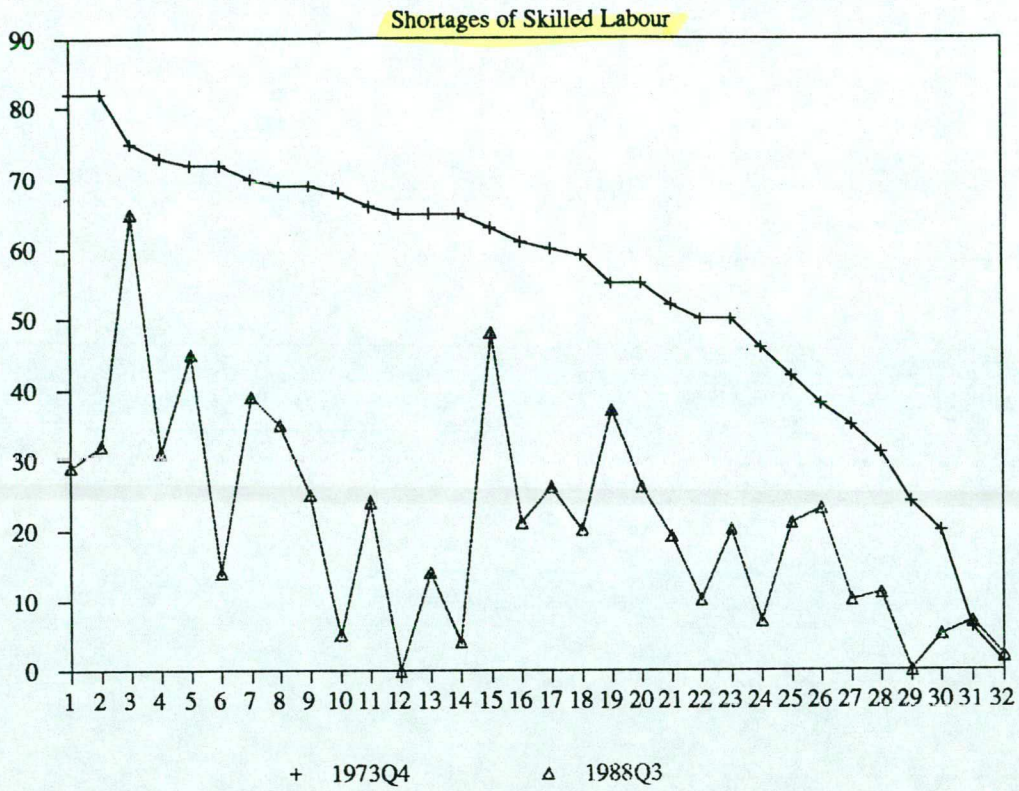
Industrial and Organic Chemicals (75)
 Consumer Durables (68)
 Printing and Publishing (55)
 Ferrous Metals (55)
 Glass and Ceramics (51)
 Other manufacturing, including
 Plastics (43)
 Non-Ferrous metals (41)
 Textile consumer goods (32)
 Construction etc (28)
 Fabricated metal goods (28)

Figures in brackets show the percentage reporting shortages of plant capacity

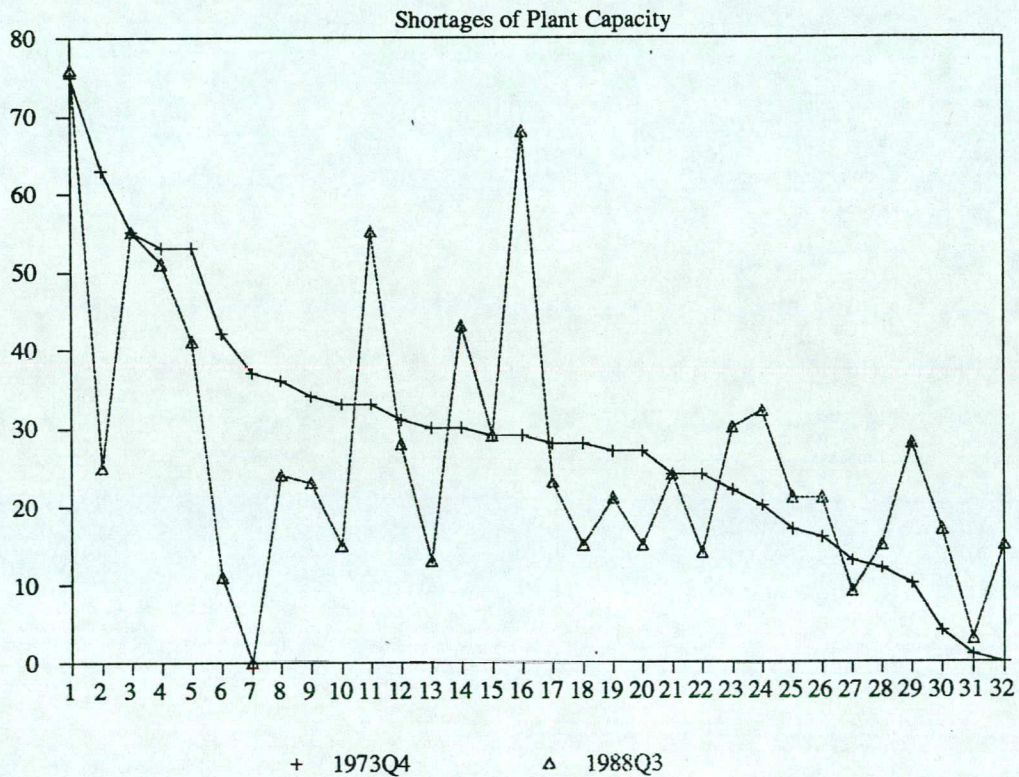
10. Real manufacturing investment was growing rapidly in 1973 and 1974 (at 7 percent and 9½ percent respectively) as it is today. In the earlier period the boom was followed by a recession, with real GDP declining in 1974 and 1975. It is hardly surprising, therefore, that the percentage of firms reporting that output was below capacity increased sharply in 1974 and 1975.

11. One major difference between the two periods highlighted in Chart 8 is that in 1973 firms were reporting shortages of skilled labour as well as capacity. The latest CBI survey, while revealing certain similarities with respect to plant shortages, suggests that lack of skilled labour is not a problem. There is only one industry - electronic goods - in which over half the respondents reported shortages in skilled labour. A reported level of plant shortages may now result in rather higher imports, however, because it is easier to get products from abroad as markets are much more closely integrated than they were in 1973.

CHART 8: CBI INDUSTRIAL TRENDS SURVEY



CBI INDUSTRIAL TRENDS SURVEY



The horizontal axes of these charts refer to the 32 industries identified in the CBI survey. They are listed in Annex B, which also shows the survey results for each industry for 1973Q4 and the most recent four quarters.

The Potential Contribution of Capacity Shortages to the Current Account Deficit

12. A rough idea of the likely size of capacity effects can be obtained by analysing the recent errors in our forecasts of imports and exports. The current equations take no explicit account of capacity constraints. An estimate of the maximum capacity effect can be obtained by assuming that all of the forecasting error could be put down to capacity factors. However the equations may well fail to predict accurately for many other reasons. For this exercise it has been assumed that the errors in the import and export predictions would have been the same as the average over the last three years had it not been for capacity effects. It has also been assumed that capacity constraints started to have a significant effect on the deficit only from the start of this year. This implies that the effects of capacity shortages are given by this year's underprediction of imports (and the overprediction of exports) after making a suitable allowance for the average errors observed over the past three years.

13. Table 4 shows the results of this exercise for manufactured goods. Actual import growth was 4.1 percentage points more than expected in 1988. On average over the last three years the equation has overpredicted the import growth rate by 0.4 percentage points. The capacity effect is therefore estimated to have added 4.5 percentage points to the growth rate of imports. The export equation overpredicted exports in 1988 by 0.8 percentage points. Over the last three years it has on average underpredicted the growth rate by 1.1 percentage points. The capacity effect is therefore calculated to have held back export growth by 1.9 percentage points in 1988.

Table 4: Estimated Maximum Contribution of Capacity Constraints in Manufacturing to the Current Account Deficit

(Growth rates in percentage points)

	Actual	Predicted	Unex- plained change	Average error over previous 3 years	Implied Capacity effect	Contribution to Current Account Deficit (£bn)
	(1)	(2)	(3)	(4)	(5)	
(a) Imports of manufactures	16.9	12.8	4.1	-0.4	4.5	-3.0
(b) Exports of manufactures	4.9	5.7	-0.8	1.1	-1.9	-1.2
					Total	-4.2

Note: (3)=(1)-(2)=(4+5)

14. The CBI survey results suggest that there are few, if any capacity shortages in the non-manufacturing sector. Shortages have been reported in the construction industry but almost all of the traded goods in this sector are classified as manufactures for the purposes of the Overseas Trade Statistics. It is also unlikely that capacity constraints have affected the oil and services sectors. Hence the estimate of the effect on the manufacturing sector deficit is probably a good guide to the impact on the current account.

Composition of Trade

15. Many commentators have taken comfort from the fact that capital goods account for a high proportion of manufactured imports. This is only encouraging if the imports are in addition to, rather than in substitution for, domestic capital goods production. For example, if two countries have the same trade deficit and identical investment levels, the fact that one of them imported all its capital goods while the other produced them all domestically would not mean that the first country's deficit was any more worrying. In the UK, however, fixed investment in manufacturing is expected to rise by 18 percent this year. This suggests that imports of capital goods are adding to our productive potential which may in time help to reduce capacity constraints and the trade deficit.

16. The product classifications of the trade data leave much to be desired but the figures shown in Table 5, are fairly reassuring. Capital goods and intermediate goods together accounted for half of

the increase in manufactured imports between the first eight months of 1987 and 1988. The table also demonstrates that imports of cars - which are up 28 percent on their level over the same period last year - account for only 13 percent of the increased volume of manufactured imports.

Table 5: Imports of Manufactures (excluding erratics)

	% Share of total imports of manufac- tures in 1987 H1 (1)	% Change in volume Jan-Aug 87 on Jan-Aug 88 (2)	Contribution to total volume increase (3)
Total manufactures	100.0	17.0	100.0
Semi manufactures	34.6	12.3	25.0
Finished manufactures of which:	65.4	19.6	75.0
Cars	8.4	28.4	13.3 } X
Other consumer goods	15.8	11.6	10.1 } X
Intermediate goods	22.5	21.9	28.2 } Y
Capital goods	18.5	22.0	23.4 } Y

Source: DTI

17. Curiously exports of capital and intermediate goods have been extremely buoyant. This is probably because such goods are not close substitutes so capital goods producers do not have the option of selling their output either at home or overseas depending on where they can earn the highest profit. The simultaneous rise in imports and exports probably reflects increased investment demand spread widely over the G7 countries.

Table 6: Exports of Manufactures (excluding erratics)

	% Share of total exports of manufac- tures in 1987 H1	% Change in volume Jan-Aug 87 on Jan-Aug 88	Contribution to total volume increase
Total manufactures	100.0	5.5	100.0
Semi-manufactures	36.6	4.9	32.3
Finished manufactures of which:	63.3	5.9	67.7
Cars	3.5	-0.3	-0.2
Other consumer goods	12.2	-0.8	-1.8
Intermediate goods	27.8	1.4	7.1
Capital goods	19.9	17.6	62.6

Source: DTI

Conclusions

- 18.(i) There is evidence of significant capacity constraints in a number of industries, although the problem is by no means universal.
- (ii) Unlike in 1973-4 - the last period when similar capacity constraints coupled with a high current account deficit were observed - there is currently little evidence of shortages of skilled labour. On the other hand, with more closely integrated markets, a given level of plant capacity shortages is likely to result in higher imports than it would have done in 1973.
- (iii) Rough calculations suggest that capacity constraints could have been responsible for increasing imports by up to £3 billion and reducing exports by up to £1 billion in 1988. But these estimates are subject to wide margins of error. Even if £4 billion of the projected £14 billion current account deficit is due to capacity constraints, it may take some time for these constraints to ease and for this effect to be reversed.
- (iv) The increase in the share of capital and intermediate goods in our manufactured imports combined with the unusually high growth in manufacturing investment, is reassuring in that it implies that capacity constraints should in time become less severe.

ANNEX A: Capacity shortages, output and trade performance in selected industries

(a) Metal Manufactures*(What proportion is British Steel?)*

1. This industry provides a classic example of a sector where imports are expanding as a result of capacity constraints. Over the last year metal manufactures' output has increased by 11 per cent while the latest CBI survey showed that 70 per cent of firms regarded plant capacity as an important constraint on output, compared to a mere 12 per cent at the same time last year. Demand has increasingly been satisfied by imports. In the year to July metals imports had risen by 17 per cent in volume terms. It is also likely that companies have been directing output to the home market instead of exporting it. Over the last twelve months exports have increased only 2 per cent, less than a third of the rate for manufacturing as a whole. The CBI survey also reveals that 90 per cent of firms in this industry believe that the high level of their prices relative to those of overseas competitors are limiting their ability to win export orders. This is consistent with the interpretation that the industry is operating close to full capacity and therefore responding to increased demand, be it domestic or overseas, by raising prices.

(b) Chemicals

2. Output in the chemical industry has increased by slightly less than the average for manufacturing between the second quarters of 1987 and 1988. But exports rose 7½ per cent and imports were up 13½ per cent in the year to July. This suggests that domestic producers face a combination of strong domestic and overseas demand. According to the CBI survey, around 40 per cent of firms believe that plant capacity is a constraint on their output, compared to around 50 per cent at the start of 1987. Only one fifth of firms felt that output was currently below capacity, however, suggesting that imports are likely to continue at a high level while there must be a danger that the healthy growth in exports will slow down.

(c) Mechanical Engineering

3. This is another industry where output growth has been slightly below average (5 per cent compared to 6 per cent for all

manufacturing). The evidence concerning constraints on domestic capacity is mixed. Only 17 per cent of firms report that shortage of capacity is a constraint on orders. The proportion of firms reporting that output is currently below capacity has also declined by 20 percentage points over the last year, yet at 37 per cent is still relatively high. Against this background relatively slow growth of imports might have been expected but they have increased by around a quarter during the year to July. In addition the industry has increased its exports by around 10 per cent in the last year. The most plausible explanation for these statistics is that the products produced by domestic and overseas firms are not very close substitutes. For example, spare parts are likely to be produced by firms in the country of the original supplier. There is also a high degree of international specialisation in the production of certain capital goods. The implication is that a reduction in domestic demand may reduce imports but is unlikely to affect exports.

(d) Electrical Engineering

4. In contrast to mechanical engineering, this industry has experienced rapid output growth, of around 11 per cent, between the second quarters of 1987 and 1988. Exports and imports have risen by a similar amount during the last year. Firms in this sector are not facing capacity constraints, according to the CBI survey. Only 14 per cent reported plant capacity as a constraint on output and a third claim that output is still below capacity. This is consistent with the hypothesis that domestic and imported engineering products are not close substitutes.

(e) Motor Vehicles

5. Output growth in motor vehicles (and parts) has been running at around 10 per cent for the last eighteen months. But the evidence suggests that their supply response to the increase in domestic demand has been rather poor. They are now exporting only 1 per cent more than a year ago, implying that firms have chosen to meet demand in the lucrative home market rather than in the more competitive overseas markets. The rise in sterling during the last year has probably added to pressures to opt for the easier life of meeting domestic demand. The CBI survey results suggest that there is plenty of spare capacity, with only 14 per cent of firms regarding plant capacity as a

constraint on output. Capacity constraints in the car industry have received particular attention in the media (see, for example, Sunday Times Business News, pD8, 11 September) and there is evidence that the situation is rather worse in this sector. The major companies have cut back on low cost finance schemes and are producing less of their output at UK plants. Imports for the industry as a whole have risen by around a third over the last year, compared to a rise of only 2 per cent between 1986 and 1987. This may in part reflect a shift in tastes which may be difficult to reverse.

(f) Food, drink and tobacco

6. This sector is definitely a laggard, having increased its output by only 2.8 per cent in the last year, less than a quarter of the growth rate of total manufacturing. The proportion reporting that output is below capacity has dropped dramatically from 67 per cent at the start of 1987 to less than 20 per cent in the latest survey. This suggests that capacity constraints are probably becoming important even though only 19 per cent claim that plant capacity is a constraint on further output.

7. Imports have increased by a mere 4½ per cent over the last year but there must be a chance that this percentage will increase since the industry's supply response has been so poor. Exports have increased by only 2½ per cent, further evidence that the industry is not performing well.

(g) Textiles

8. This is another sector exhibiting very slow growth. In the period between the second quarters of 1987 and 1988 output actually fell by 2.1 per cent. Exports have been growing at an annual rate of around 7 per cent over the last 8 months. Only a fifth of firms cite plant capacity as a constraint on output and the proportion of firms that say they are operating below capacity has remained at around one third over the last eighteen months. Imports rose by a little more than the average for manufactures in the year to July but there is no sign of imports accelerating.

(h) Clothing and Footwear

9. This industry's recent experience is similar to that in textiles and food, drink and tobacco, in that output growth and exports have been sluggish. Exports rose 13 per cent in 1987 but have increased by less than 2 per cent in the twelve months to July. It is not surprising, therefore, that few companies in this industry regard themselves as constrained by capacity (3 per cent in footwear and 19 per cent in clothing and fur). Despite this spare capacity, and in stark contrast to the textiles sector, imports rose by over a quarter in the year to July. It is possible that this reflects the increase in price competitiveness of imports from countries with currencies tied to the dollar, eg the East Asian NICs.

10. If firms were facing severe capacity constraints it is likely that their first reaction would be to raise prices where possible. The result, in an open economy like the UK, would be a decline in the market share of domestic producers, but their profit margin on domestic sales would rise. Firms may respond to the buoyant sales and increased profits by relaxing control over labour costs. This would probably offset somewhat the rise in domestic profit margins and might lead to a fall in export profit margins. (This is because exports face a higher price elasticity of demand and so firms would probably raise overseas prices by less than the domestic increase.) The recent evidence supports both of these conjectures. Domestic profit margins in manufacturing rose by around 3 per cent in 1987 and by the first half of 1988 they were a further 1.2 per cent above the level in the first half of 1987. In contrast, export profit margins declined by 0.5 per cent between the second quarters of 1987 and 1988, following a rise of around 2 per cent in 1987.

ANNEX B: Percentage of firms reporting that plant capacity is a factor likely to limit output over the next few months

INDEX REFERENCE	PLANT CAPACITY				
	1973Q4	1987Q4	1988Q1	1988Q2	1988Q3
1 Industrial & Organic Chemicals	75	71	66	59	76
2 Pulp, Paper & Board Products In General	63	31	25	27	25
3 Ferrous Metals	55	28	32	20	55
4 Glass & Ceramics	53	44	54	47	51
5 Non-Ferrous Metals	53	31	21	30	41
6 Drink & Tobacco	42	10	5	11	11
7 Shipbuilding	37	0	0	11	0
8 Motor Vehicles	36	44	50	30	24
9 Food	34	22	12	12	23
10 Wool Textile, Spinning & Weaving, and man-made Fibres	33	45	21	15	15
11 Printing & Publishing	33	26	23	26	55
12 Fabricated Metals Goods, Including Hard Tools	31	30	11	21	28
13 Pharmaceutical & Consumer Chemicals	30	25	16	26	13
14 Other Manufacturing Including Plastics	30	15	34	28	43
15 Building Materials	29	11	19	41	29
16 Consumer Durables	29	0	28	65	68
17 Rubber Products	28	40	21	59	23
18 Industrial Machinery & Contractors Plant	28	21	30	34	15
19 Other Chemicals Including Coal & Petroleum Products	27	23	18	0	21
20 Scientific Instrument Engineering	27	17	10	8	15
21 Metal Working & Engineers Small Tools	24	13	18	34	24
22 Industrial Engines & Heating With Other Equipment	24	10	6	7	14
23 Timber & Wooden Products Including Furniture	22	29	28	32	30
24 Textile Consumer Goods & Other Textiles	20	31	15	29	32
25 Other Mechanical Engineering	17	12	21	15	21
26 Hosiery & Knitwear	16	12	13	31	21
27 Electronic Goods In General	13	7	5	12	9
28 Footwear, Leather & Fur	12	21	17	13	15
29 Constructional Steelwork & Heavy Plant	10	26	20	37	28
30 Electrical Investment Goods	4	17	7	10	17
31 Aerospace & Other Vechicles	1	7	4	79	3
32 Agricultural Machinery	0	0	0	7	15



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PRIME MINISTER

A NEW TANK FOR THE ARMY

1. I minuted colleagues about this urgent requirement on 4th August and 9th September. OD is to discuss it on 25th October. I shall be unable at that stage to make a final recommendation because I shall still be awaiting advice from my Department's Equipment Policy Committee (EPC) which meets on 3rd November. (The EPC's meeting cannot be advanced because discussion of possible procurement arrangements, relevant to the EPC's consideration, is still in progress). Meanwhile I have some further comments to supplement what was said in my earlier minutes.

a. "Option 8" - the Treasury option of retaining Chieftain with CHARM and CHIP improvements - would be relatively cheap. However, these improvements in firepower and fire control would do nothing to remedy Chieftain's major deficiencies in mobility, armoured protection and mechanical reliability. To bring Chieftain fully up to the standard necessary to match the Soviet threat, even if physically possible, would cost as much as to replace it with a new tank. I can see no sense in investing that kind of money in a 20 year old weapon system; but without such an investment Chieftain would remain inadequate on the modern battlefield.

b. The options which involve fitting existing Challenger with either the Leopard 2 or the Abrams turret and smoothbore gun (Options 5 and 6) involve major engineering problems. The Abrams turret does not fit in the Challenger hull. To make it do so a major redesign of the hull and changes to the turret would be necessary; these would be costly, take time and at the end of the day might not work. Leopard 2's turret presents similar problems.



c. Further work has been done to compare the performance of rifled-bore and smoothbore guns and their ammunition (a point raised by Lynda Chalker in her minute of 11th August). I shall want to hear the EPC's advice on this, but I understand that the US Army plans to field a round in 1989 which is expected to have a penetrative performance somewhat better than CHARM, which is expected to enter service in 1992. (This information is extremely sensitive). Further US development of this round, it is claimed, could yield significant advances in the early 1990s. There are also industrial proposals to improve CHARM to similar levels to meet the threat foreseen in the mid to late 1990s.

d. Lynda also asked whether the Germans shared our view that Leopard's frontal armoured protection is inadequate. The answer is that they do and plan to make improvements. They make high claims for a new type of advanced armour ("Type D") but will not know for another two years whether or not it is successful. Lynda also suggested that we might collaborate with them on improving their armour using UK technology. The whole question of collaboration on armour is sensitive and the security of our technology is an important consideration, but discussions on the sharing of technology are in progress. We gave the Germans an early design of Chobham armour in the 1970s, but Germany has gone down a different design path which does not allow the use of current Chobham technology.

e. A decision in favour of Challenger 2/2 would not be straightforward to implement. Vickers have still to demonstrate that they are capable of developing Challenger to the required standard. Although the chassis of Challenger 2/2 is largely common with that of Challenger 1, the tank as a whole has still to be developed; the risks involved in integration of the components into a working weapon system are consequently greater than with the foreign contenders. If therefore the decision were to go in



Challenger's favour we would clearly need to be satisfied that the risk could be properly managed.

2. I am copying this to OD colleagues and to Sir Robin Butler.

G.Y.

Ministry of Defence

17 October 1988

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Paul

FROM: M A WALLER

DATE: 21 October 1988

CHIEF SECRETARY

- cc. Chancellor
- Sir P Middleton
- Mr Anson
- Mr Monck
- Mr Burgner
- Mr Turnbull
- Mr MacAuslan
- Mr Meyrick
- Ms Osmond
- Ms Yule
- Mr Call
- Mr Tyrrie

*Re X, I thought
 City had announced
 Re L had announced
 all sponsor divisions as
 Paul @ JTI. shake-out*

Ch. Time-formally speaking. This is, I think, a deliberate mistake by Mr. W.

ROLLS-ROYCE LAUNCH AID APPLICATION

1. This is a position report on where matters stand on the consideration of the Rolls-Royce (RR) application for £107m launch aid for the further development of the RB211 engine (the 524 J/L programme).
2. At your bilateral with Lord Young it was agreed that a deadline should be set for RR to supply the information on the company's financial prospects with and without the project/launch aid, which was an essential input into the appraisal of whether launch aid was justified. The deadline was 14 October: the company provided some group financial forecasts by that date, though they fall short of what was requested both in terms of timescales and coverage of the material.
3. Despite the shortcomings of the financial data provided, we believe that the overall picture which now emerges for the existing technical and financial appraisal points clearly to a Government decision to reject launch aid:

21/10

- (i) The business case for the project looks marginal in financial terms. To earn the target rate of return of some 11% requires RR to reduce unit production costs by 20% - a target set for other major RR engine programmes but never achieved. In addition, the return is extremely sensitive to sales price in a market which is and will continue to be fiercely competitive, with heavy discounts being offered on engines and spares for all major orders.
- (ii) Despite these marginal returns there is every indication that the project will go ahead irrespective of Government intervention. Not only did the company announce their intention to do so at the Farnborough Air Show (where one could arguably aim off for a degree of media hype). But it has also now announced it has successfully negotiated risk sharing involvement with a number of Japanese companies. Moreover, RR admit that if they want to stay in the large civil aircraft engine market they will have to invest in this programme.
- (iii) The material on company financial forecasts (which covers the period up to 1993) shows a steady stream of profit increasing from £134m in 1988 to £252m in 1993, with only relatively small dip in profits next year. The balance sheet shows a nil net borrowing and a rapidly growing pool of cash, increasing from £100m in 1988 to £775m by 1993. (We assume this reflects the healthy state of their military sales, though they have not provided a breakdown of civil and military businesses.) On top of this the group have also secured borrowing facilities of some £250m. On their own forecasts, therefore, there is no cash constraint on company financing the project themselves.

- (iv) RR's expressed unwillingness to finance the whole programme from private sector sources is based on the impact on their share price, a position worsened by the Company's accounting policy of writing off all R&D expenditure against profits immediately. But it is not the Government's job to underwrite RR's share price (and implicitly, protect RR from possible takeover). Choice of accounting policy is entirely a matter for RR but that should not affect a commercial decision on whether or not to proceed with the project. It would be more normal practice to carry development expenditure forward in the balance sheet then and write it off in future accounting periods when the project is generating profits (a policy followed, for example, by BAe). This would ameliorate the immediate impact on profits (and therefore the share price) though it would not affect the overall profitability of the project. Nor do we believe that markets slavishly follow P/E ratios without regard to the underlying strengths (and weaknesses) of a company.
- (v) There do not appear to be any special/exceptional wider economic benefits from the engine programme (e.g. technology transfer) which are not reflected in the prices charged by RR's suppliers. And there is no strong strategic argument for supporting the programme. Airlines would still benefit from the fierce competition from the two major US manufacturers.

4. We have pressed these arguments hard on DTI officials. Their professional financial advisers accept them and share our view that the right thing now is to advise DTI Ministers to reject the application. However, officials in DTI's Air Division (the

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sponsor division for the industry) would prefer to go back to the company to press them for the full financial information on group profitability etc. originally requested and to continue technical/commercial assessment of the 524J/L programme. We have pointed out that RR have been given fair chance to make their case and have singularly failed to do so. Continued interchange and elaboration is not justified. Indeed it rather smacks of DTI seeking to make RR's case for them. IX

Next Steps

5. Given this divergence of view we have agreed with DTI that they should immediately put to Lord Young two alternative courses of action i.e. to indicate now to Rolls Royce that their application is rejected or continue further examination and discussion of the case with the Company. If Lord Young appears to favour the latter course then you may wish to consider intervening to try and bring the matter to a head in the collective discussion with the Prime Minister and Lord Young. I understand No.10 Policy Unit agree with the general line set out in paragraphs 3-4 above.


M A WALLER

Alex. J. W.

FROM: GUS O'DONNELL

*dealt,
I think*

DATE: 25 OCTOBER 1988

PS/CHANCELLOR

*Thanks.
This is for
P. J. G. M.
M.*

cc Sir T Burns
Mr P Sedgwick
Ms Turk
Mr Curwen

SEPTEMBER EXPORT "RECORD"

You asked whether this month's export figure was a record even excluding erratics and allowing for any distortion caused by the procedures used to compensate for the postal strike.

2. The value of exports excluding erratics (ie ships, North Sea installations, aircraft, precious stones and silver) was £6897 million (BOP basis) in September. This is the highest figure on record. The previous record was the April 1985 figure of £6476 million.

3. The difference of £471 million between the latest figure and the previous record is substantially in excess of our best estimate of the possible upward distortion to the export figure resulting from the procedures adopted by Customs and Excise to allow for the postal strike.

4. The September export figure (excluding erratics) is also a record in volume terms, being 3 per cent above the previous record observed in December 1987. Hence I think we are fairly safe in describing the September exports figures as a record.

MS

*ps. I also asked
whether the Q3 fig
was a record for
any calendar quarter.
Is it?*

Gus O'Donnell

A O'DONNELL

CHIEF SECRETARY

FROM : S A ROBSON
DATE : 7 NOVEMBER 1988

c.c. Chancellor
Sir P Middleton
Mr Anson
Mr Sutton

REPLACEMENT OF THE CHIEFTAIN TANK

Mr Alan Clark has asked to see you. This minute sets out some background.

2. The British Army has just over 1000 tanks. These split pretty evenly between the older Chieftain and the newer Challenger 1. The Army want to replace the Chieftain. There are four real options :

- (i) retain Chieftains and put the money into other weapon systems which kill Soviet tanks;
- (ii) replace Chieftain with a newer version of the Challenger - called Challenger 2;
- (iii) replace Chieftain with the German tank, Leopard 2;
- (iv) replace Chieftain with US tank, Abrams tank, so-called MIAI, Block 2.

3. In my view we have another EFA on our hands in the sense that MOD have not done the analytical work to provide Ministers with the information to take this decision (which in undiscounted, constant price terms will cost around £2 billion). In particular they have produced no analysis on the first of the above options - namely should we put money into tanks at all. This obviously needs to be tackled before any choice of replacement tank could be made.

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4. Looking at the replacements, the front runner looks like the US tank. It is a proven tank in its MIAI version. The Block 2 variant is being developed for the US Army and will be in service in 1993; from the UK point of view this development is low risk. The tank is the most effective of the replacement options and, in net present value terms, it is cheapest when account is taken of both initial capital costs and of running costs. Against this Challenger needs more, and more risky, development, it is more costly and, even if the development is successful, it will be less effective.

5. No doubt Mr Clark wants to wring his hands about the implications of such a decision for Vickers, the UK manufacturers of Challenger. Vickers are the UK sole tank manufacturers,. They have 2 factories - in Newcastle and in Leeds. The Leeds factory was bought from the Government (Royal Ordnance) in 1986 but with no commitment to any order for Chieftain replacement.

6. Vickers employ some 1600 people at their Leeds and Newcastle factories. Sub-contractors employ a further 6,000. Over time these jobs would disappear as Vickers current tank work comes to an end. If the UK does not select a Vickers tank, no other country is likely to do so.

7. This would make it hard for the UK to take part in any further NATO collaborative tank programme, unless some other UK company decided to go into tanks. This is not a showstopper. There is no particular reason for the UK to produce its own tanks unless we feel foreign suppliers might take us to the cleaners. As there would remain international competition between US, German and French producers, this is not a great risk.

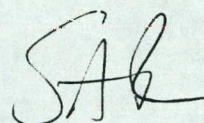
8. A real risk with the US tank is that it is priced in dollars and so carries an exchange risk. I am pressing MOD to get a £ price from Abrams (as we did from Boeing on the AWACS). Another risk is the possibility we may be left with no company in the UK capable of doing in-service improvements to our existing Challengers.

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9. The issue is not clear cut at the moment. Subject to the points in the previous paragraph, I am inclined towards a solution in which MOD get an initial tranche of replacement US tanks but are not allowed the full number in advance of producing some proper analysis of the optimum mix of investment in our various anti-tank weapons. This will almost inevitably show some tanks are needed but not necessarily the 600 MOD want.

10. Finally Vickers the company. Such a decision would not be the end of Vickers. In 1987 they had sales of £780 million and profits of £70 million; their defence side, which is mainly but not entirely tanks, contributed £135 million sales and £13 million profit. The rest of the business includes manufacture of Rolls Royce motor cars, of printing plates, of business furniture and of medical and scientific equipment. The balance sheet shows borrowing of £55 million against shareholder funds of £222 million.

11. I suggest you simply listen to Mr Clark and give no indication of Treasury thinking. You could say that we will be looking at cost-effectiveness, risk and affordability and that we are not convinced MOD have done sufficient analysis to allow sensible decision taking.



S A ROBSON