

Dele 19-129 e2 (31)

JICSAW attempted to find a plausible theory into
some evidence -

→ note - 'various estimates that had been made of the
size of the threat needed to deliver attack were largely
questionable'.

p3 - 'Japan did break down ever before Nagasaki
~~and~~ and Hiroshima'

→ 50% total in 75% urban

→ full bat - 50% urban.

p4 - 30% casualties → whole pop 'affected'.

→ 300-500 WNC (incl) for 50% total for 75% urb

100-200

for 50% urban

(enriched) ^{range} - 9 cities of 50k+ ; 8 mil pop

→ killed 20% → ; dir + indir attacks - 60% - of whole pop +

(Chike for urban + big urban.

→ some few hundred 1st + 2nd yrs.

Dele 19-272 e 26 p1 - Could only van pd for a few who
withstand US sp.

239 p2 - re US eff of W 68 design; but no miss

- in 1 by 1 miss (open)

Dele 19-27a e 28a p2 - Moscow on sect of highly cerebral

govt

Dele 19-27a e 28a - correct ap?

1972 SIC - 'provided we had the ability to
destroy Russia we would have the ability to inflict
unacceptable ~~and~~ damage on the S-U.' "

-0-
 p2 - limited cap → 'undermines on capital' → direct debit system
 → need to en + self (- may be more demands)
 danger is - 'no fully demarshable basis for the, independent offer'
 (consider p01 + p02 in the double)

p9 (+M2) - threat cap of being imported to the Soviet state; or also a
 whole, or a combination of the two. (discussed in Annex B)
 'Other' - Annex D. ; further - Annex A. (→ Annex A P02)

e55 p1 - re Diff exp - should have made more & not being to all
 no power

p2 para 25 - Options
 para 26-27 - relative value of options
 para 31 - 'Independence with other UK exp' - includes
 - 'mainly my body. Not all exp addresses address it'

Annex D para 7 - Mission from Paris
 - admits that figures are debate
 → should come - prob of smaller (but not limited level of damage is a
 good deal higher.

p3 - ~~subject~~ thing - original intent → for May
 - 'in para 10 the exp of credit can be regarded as separate
 for + p01 to conduct of New + New Part. but this is more general
 Chabreal. I am more uneasy re the 5 new laws with
 about the validity of such high level policy decision in civil
 Law which into a club they set - 'part of it'
 'idea is that with the out on no argued Pot on it
 or (-1 hour...) can read of it re option

e57 p1 - Crisis - had not a 22/6. - direct credibility &
 independent are. - 'this is an issue that has worried re la son
 can' - (Noyta Law)

p2 - need an analysis of the validity of our reaction
 terms - right to do this job - but prob with clear
 - ... calls the requirement for clear with goal

Dele 23-219

e 60 p1 - 'It has already been agreed to be highly desirable that the report should not go to Ministers until it can be set alongside the work of the CST's group, and then considered in the round'. Next seeing internal director for PM

p3 - study - common Douglas Wood that Dutt report is the ground for providing clients [for Quinlan]

e 61 p1 - paper for Rae in response to Q on d involvement (credit withheld - a page)

e 66 p2 - re Chen + Dutt's

p3 - Minutes conference in 1977 - whatever the view on Roman and - abandoning Chen evidence would be wordy way of proceeding - 'It would be seen as a marked downgrading of the main new copy, with your comments left out of or whole deleted in the eyes of our admirers, our allies & our own people' -> Ministers (at this point in context) was word cancel Chen

e 71 p1 - agree put to delay report with minutes, various other NM hand to PM

- Dutt report sent to PM - with arguments for delaying sharing with other Ministers -> Ministers may feel it came to come to a view of give full 3 part report + political point about labor policy

- not report to cancel Chen - unless need to also look at Dutt

- Kealey (not not done) - had said if Mrs agrees then cancel Chen; -> interim party for Chen, without main meeting

e 80 - PM decided no meeting on 17/10/78 till Anderson; + 1 x party for Chen

e 93 p3 - complaints about one-clarification of 'c...E' (clarification) - cont

e 96 p1 - 17/10/78 - 'revolve' issue for Wood -> overlap with main group -> 3 reports not 2.

e 97 - 3 parts: part 2 = paras 18f of draft Dutt report; p 2 for Xmas + for p 1; p 3 in Nov 4.

p 2 - cont discuss in ad - + sep for Chen

e 98 - 25/10/78 - internal at this time + minute to PM -> 3 parts

p 3 - Chen been for discuss of Anderson; Timing of 3 parts?

e 108 - pt 1 + 2 - 13 Dec; p 3 - 20 Dec

Def 23-219

e2 - 3/11/77 - DUSCP's Study group - which has been defining the scope of the Saucier System Study will have to be wound up.

e4 - Saucier System Study - proposal for conduct of study

e5 p2 - 7/11/77 - Chie Rose - proposed framework for study - incl. list for Det - Miami Indian Affairs Act, T, 6, 9, 10

e7 - Quick report to e5 (Rose)

[draft criteria were made available to Pearson group before presented to ministerial group, apart from PM]

Fondutta

Apr 78 ~~Fondutta~~ Fondutta / Firsbrato (-10/206, case closed)
(small, 15068 + 1)

Nov 78 Qurgel 47 lbs; smaller; high speed PC

Aug 79 - novel design, more diagnostics.

CSA → review Corden → 2 part end

→ PWS - buy for US - value the R&D at two

~~*~~ Dele 2a-2125 e 78-1

report a US/UK rig - 10/11 July 1980.

'severely agreed to initiate the recovery action for the formulation of a Statutory Declaration which would relate to the subject of relevant design information'

+ 'pursue both Statutory Declaration must be maintained'

278-3 - D COSCA will be with Co Alan for 11 Aug with a view to deepening our Trade-related exploits
NPS transfer to metals 'negot?' (Aug 80)

79-4 p3 CSA has asked DDO to set in motion the procedure for Statutory Declaration - 'to create an avenue to nuclear information on Trades'. He understood that a Statutory Declaration was likely to be signed this week.
D (AL-RE with CANL receive)

- explore the part of greater subject of info + harder than in the past. - DDO the

- 6 Aug Mtg + Trade by

(e79-5 - 4 has 512 Wt, 5 has 640 Wt)

+ 1st US - should cover cont Pol as (not 3 Wt).

e79p1 - PSA ad - delete - 'minor Pen. aids'

e86p1 - CSA ad had ppnty re No of Wt. against etc

e76-3 - DM criteria - 'have not been endorsed by Minutes & need not therefore be applied too rigidly'

e76p2 - doc has Pen Act excluded for PSA

Rele 79-474 BNBMS Module Repn Fault - Pol.

el us - uk?

ps - Uk faults would give real independence as some modules would still need rebn to us

prob technical details of module test units. + cost

Rele 25-335

Tests

e29 79 test computer to 'mainly' all are given open for future differences system'. → size + weight constant

→ v small eggs in a new set.

e32 Nov 78 - first attempt at a device for high speed RV.

- compatible with Pos in result.

→ 'before we could bring such an experimental device into sale + reliable form, we would need to do for 79 test'.

→ it successful - look at timing speed. + you do a us.

Defe 24-1081 cont

e39 p 9 - King Rate - NATO - every 15 sec;
National - complete in 30 min - incl 15 min 'for depth
incursions by the SSBN taking as the perimeter launch
handed'

p10 - 1980+ →

a) 1 SSBN continuously on pbl

b) 2 SSBN on pbl for -

i. 70% of time - normal peacetime

ii. 90% - " - times of tension up to about 1 yr.

iii. 100% - " - times of high tension, up to about 75 days.

p12 - FCS update + upland with Guts to high pbl.

ecl p2 18/10/75 re standard

e58 - standard (as e39)

e66 - " -

- notes indicate updated para 202 + 203 refer to

Vuln Nos (AP-550-1-2-INT) + SACBOK General
Staff Plan

p14 - 213 - scale of alert - 1 only.

Defe 17-1477 (1977)

e3 - reply center for control 20th of same - date
28/10/77 m8

e15 Fordice Teo to CTB

e16 - Teo - Char (+ 216 sea room) + TNW + success.

e18 2 test - 2 (at Mar 78 - further test of how ahead den

(1) - Exped knowledge knowledge of small hand handed (more ab
day 1
- for CM or TNW

(2) is sum to den US not to den in 79.

e19 16/3/78 test - reasons for improved Char. (+ sea room)

(b) exped knowledge, of den only den to den.

- can be based on 20 test of deni point
Principle

Defe 13-1477 600

e23 ~~Rat no further~~ ~~2508~~ - small + hard work, poor for CM
(also see 2508)

e25 CM

e26 CM for SNF

e27/8 CTB tactics

e29 25/11/77 - note for team re ~~top~~ studies

e32 p3 - return to No 2508

- "there is no US warhead similar to our light-weight design (the Poseidon and Trident warheads are much lighter and smaller)."

p5 - US partially involved in the more advanced design
- if we intend to see US may provide related info
- what could help to make a design

e37 - 10 Bombs Co mtg, 1/12/77 on Nuclear Defence Policy

e41 Tem d'Ref for study

e42 - " - FCO Analysis

e46 - Harold Brown (US) indicated if UK want already in
new basis it should stand now - but should ~~stand~~ ~~now~~
abandon

e47 p3 - handwritten note re One study + study

e49 Tem d'Ref incl 'Cont min ~~docs~~' report

e50 16 Nov 78 doc -

e52 - " - 'yield well below 150 kt'

e65 Weather delay to 16 Nov 78

e66b list to inform Dept Jan 1961

Defe 13-14 78

- e7 tes no Apr 78
- e16 Fondutta over 7 Apr 78 - Fondutta / Findmore(?)
- e18 - " - 11 Apr 78
- only half expected yield
- failed to match expected 1 uk + us design beam
20-150 ke
- e20 Fondutta - 10-20% below expected yield,
+ main aim of tes achieved; now done as successful.
- e22 Fondutta ~~tes~~ tes - First rate design
- aim to prove performance of reduced neutron version of Ch beam.
p2 - Sep 78 tes with separate targetry & Apr over
but with reduced yield (to give 2nd part on performance).
+ some reduction in physical dimensions.
- Also a further dev - 'new design concept' relevant to hardware
small + NL + SW,
Apr over → start ^{some} US into 63-72
Future over → start up to date with UK.
- p4 - Sep 78 design will be physically smaller.
- e24 Contract agreed 2 new tes.
- e28 TO PM - ab (1/12/77) not agreed fund for CERN dev
- e32 Over disputed - too many dev + no specific papers for
Dec 78 dev
- e35 - for delay Sep dev to Re
- e36 - come then ~~later over~~ and future dev
impetus 'in securing the release of main new UK design data'
- e38 New tes Dec 78 + full one in 79.
+ have more designs for 79 dev
- e41a Commit Fondutta design for Chen
- e57 Call on Chen + make ref about Sept 10 Aug 78

Dele 17 - (a) 78 cut

e70 Re 79 0208 - 'explor on area of Enzyme Technology' re
to B design design, - small 'polytechnic' NW
- SNK or TKN; new designs in 0208.

e77 79 0208 - 'explor behav of very small Enzymes in
area area'; only 2nd tier relevant to small head
with - design sta to us - 'who design to admin
fact' design -> re crystal of v small Enzym.
-> + relevant

CAB 21-2979

- 50% of 400 ider - v fur.

p5 - Poll (Shybolt) with was more formal than pre-full look to
Vfome + Blue Steel,
-> for 25% of Egs at door range - 'Shybolt can see the
pattern of hatched at pens being provided'

CAB 13a-4431

1962 (1966)

p1 re UK NW - can for diram - only if car-own a profit effect
-> NW could help UK eader EEC + give UK influen in NATO

p2 AWO staff 1961 - 8,800; 1966 - 5,400 (not at (But + cost!))
- over last 2y arrears on UK pay prog has led
to 'proposals decline in Am. realises to give us info. of value
considered AWO focusing on pension only -> if so we would
'receive virtually no worthwhile info.' from UK.
-> has reveal system - replacement with for Ret. -> by hardening
+ without this AWO not viable

p5 - costs + 'white paper 1964' on AWO R+D ^{to Eng} ~~to Eng~~ together

p6 - Fics/20 supply 'u235

Moby Board of ~~the~~ needs demand to 1977 (8)

- could use other National stock for supplies (7.8e) to meet
population need to 2000.

CAB (3a-4631 carb

p7 Pu domestic supply + HEU for US → for NW prog for (cancelled)
till 1968 for Pu + 1969 for HEU; + U3 to late 1970s,

→ no attempt to build reserve of HEU;

- Pu only for space (rebus logan) - but not add to NW

→ addn 2 to U235 + 500kg Pu as min

→ earmark HEU stock to rep from people or buy from US

→ Pu - continue production to 1969?

p8 Minutes of ministerial mtg 9/1/67

- Polaris East of Suez - keep open eye

- Need for R+D at AWRG to maintain (rebu info from US

- Fiss mat - re U235 7.5t natural stock + min

p10 Ministerial Mtg 15/5/67

p19 US willing to help with hardening WH if UK made commitment to

p20 Polaris opponent to modernise force

+ if accepted then would lead to continuous improvement to

p21 make improved defence. → decision deferred

p26 - make hardening - US doing - so stand adequate

+ purchase hardened RB shells for US.

- with delays - → ABR needed to render ineffective on
A3 missile with 2 WH

→ missile also hardened - (ABR (Polaris

missile + RB --- (ABR (WH

--- + delays 7 ABR (Polaris (2 WH))

p31 US Staff plan - 10mils wide, 100mils long. → 7 (1 viable

WH vulnerability - (3 Mo ABR) - 100mils + 10mils (hardened)

p35 ROP Bank + Credit - 1,300 staff - could reduce to 900

p41 Ref to Rothschild's counter arguments -

p43 1971 - re change packets

p45 1972 - TML for Europe - incl Lance

p53 - 6 UK NW on order for Buccaneers; 1/2 + 10 kb yield opt
- already deployed by RN

CAB 134-443108

p53 V-bombe NW have 220 lbs yield.

→ need 190 lbs various of cured WU.

p54 - 110 NW for Bucaraa + 65 for Sagu (64 on order).

→ 50 low yield, 125 intermediate yield. Deliver by 1976/7

p55 For Plata

p52 TNU for Amy - Lane - 12 lands, US WU, 1973

p60 Required for Lane 300 miles L 12 lands

Kingsman Kingsman Report 1968

p5 ALRE - 6,300 staff; - reducing to 5,950 by 1970

p18 Dev of 'small super hard WU' for Pol. - sim to US for RUCU

'The work falls fully on the Wpa Group would be the dev. of a R. B. envelope of the required lands + the dev. of a complete new WU of compact design' - 5-6 yrs.

- hypothesis (c)

p20 Credit work on Bo

+ Foulson work

p29f Workload to master WU

p31 - Li Dent reports - ROP Ch. 10. p30 - Carlett - Uv. Be + spent compared

p46 Potts child mirage report

p48 UK carnallos L SA about - 1,200 mo, 9 x 120 → 13.6 m dead. 9.1 m dead (60-70%),

p51 Potential for dissemination at ALRE

p53 Info from US is of dubious value if we don't really need it.

Dele 2a-1081 - Che NSR

e6 p1 - ^{A374} Safety - prob of needed < 3 mts for launch (in 50,000 launches)
Sim for needed over small city or mid suburbs

p3 STC Sale to Am Signal in bulletin Originally

e13 NSR status

p10 - capsule alt of altitudes: 15°N - 60°N;
0 - 40000 ft alt over above sea level

p11 - Fuz - airburst + surface; surface only;
'3 heights;

Rare A37 - 500nm - 2500nm

Undersea < 2000nm; unrangeable < 1900nm;
min - < 1100nm - pred to lon of max range

→ 90% repeatable on non-robotic earths

Fuz rate - 1 every 20 second. (for NATO task)
- 16 in any order

p12 - reduce in high rate for robot task if near re ABM per
- but not less than 1 per minute. (to avoid cable buffer time)

read time - 15m ~~out~~ radius to line

- max 1 min reading for 1 hr.

- in harbor - 12 mins in 2 a hr.

p13 Launch betw 20°N + 55°S - direct or surface.

p14 - prob that h/k will delete in units of undelivered trees ~~out~~
< 0.7

p15 design for 75 day patrol.

prob of catastrophic missile failure on 1 sub < 1 in 10⁶

27 p22 Mission data for de

2a p3 Range prob re delayed fuz - 'high' ? rather than high
→ or available

279 - amended version of slides (23 pages)

239 revised Water - cont per 1975 -

p9 - Resolutions - 'good' prob of achieving the damage level requirements
... re sea-air ABM; not rec re NATO role;

as compared to conventional ABM

Dele 13+1293 cas

- e29 p9 - wish that Pres/Sec of ML3 would become public -
p10 - UK should act for ML3 into with new to build
+ have R+D prog at AWC
- p18 - acting for ML3 - but not comiter to build
- e33 p1 US would be upset if C3/ML3 rejected
- e35-1 p1 ML3 hits ground at 5000 MPH - Schler (Machlen)
- p2 Outbirds ~~to~~ along - ML3/STAC/Sup A - 10000 MPH
Final speed ML3 3000 MPH, Sup A/STAC - 350 MPH
- only attached Terminal ABM.
2 SPRINTS per crew will (include Sup A/STAC or ML3)
- Minuter prob - pub cost to road hardy - as for Pol,
p415 - Can't even ML3 until committed to using it
- p6 ABM search - Sprints ends - must be maneuverable
+ can't rely on x-rays - but on neurons
- hit range 200-500'; low yield beam & effect
also - abt ABM - hit radius 25,000 to agut ^{handlers} ~~system~~
with (Sup A).
- p7 radar bladders requires headed d h w - more than UK
would care; but ends - abt ABM can cause some bladders
- e36 p1 Rel to SIC - Moscow also - unavailble to Russ. as price
to ~~break the market~~ to knock out UK.
- a p4 ML3 de-MIRVED is option.
- p5 Opt M - ~~8~~ > ML3 (UK) LUs on Pos de-MIRVED
+ 3 crews UK.
STAC - Pos + Sup A
Range - Sup A 1950, Slog 2000, Opt M 2200
- pca Opt M the best military choice - but Slog (Sup A design +
pos for later exp.
- e37 p2 Sup A has advantage over Opt M of ^{beam} ~~leading~~ technology
→ to stop for ourselves

13-1293, 1477, 1478, 20-1036, 1081

Dele 13-1293 7213

- e2 p3 - graph of system on aircraft in comms
 - effectiveness would depend on strategy in coming
 - + might create a hole for the blue aircraft
- pc - expected traits per annum in 1980, / range
 - 1 trait per annum unambiguous
 - 1 @ missile range of 1800 nm
 - 1.36 @ 1750 nm
 - 0.37 @ 2000 nm
 - 0.12 @ 2500 nm (p5 - range)

e3 p1 graph - com stored to 505 to illustrate adv of hybrid
 est - discuss in hybrid range - why?

e13 p - ref to us part of Pineda or UCMSE (CA), within MRV,
 - CA could carry Mk3 (R03) weapons

e14 discuss an approach to begin a system (R03-MRV R03, Day)

e15 Small size + high speed of Mk3 makes it diff for A03

e22 Pos - 10Wt - reduced range, 5Wt full range

e23 Querying for 505 of modern behind us already Mk3
 - to give UK the best - or to increase dependence so UK not an
 independent competitor. (in British Trend)

e28 US relation re Mk3 design & pricing - not come thru UK
 might not use.

e29 'political' disadvantage of Mk3 in Super A program.

p5 US would sell non-nuc part of Mk3 + design of UK for
 manufacture in UK. (- more than for Pol)
 - needs President's Rehearsal

p7 - Mk3 would have capabilities against Soviet defenses (to the
 Day + Super A would last)

Mk3 would mean abandoning UK R+D technology
 - sep tech could help in future collab with French
 - though could have some UK R+D

pe

Ref 69-477

1964 RB
1964 RB WU den

- p2 order 'US components' re RB WU
- e6 p2 - re Car & Fuel emergency
- e7 completion of WU design chatty den 1/7/65
- e8 p1 E of same requirements C30(3/65)
- e9 US AFD circuit able to cope with demands of UK fixtures
→ bus needed to perform in excess of proven capability
- p2 re main bus - needed to encode UK fixture to signals for US
Euler
- 10 'emergency removal of RBs from ^{lab} launch tubes'
AFD/Fuel compatibility
- e12 RB mfg - Atomic CONIFER
- e13 Container based on that for WE177
- p2 emergency removal of RB - at jettis (UK) or Euler (US)
(a) if release part for nose fair could be sealed → jettis only.
(b) if need to cut away.
- e18 removal of jammed RB from launch tube - emergency?
- e20 p2 Airbase base - was 3 on 2 WUs → 7-8
- e22 (22/2/66) New freezing data would be met
- e20 p2 US Ined Needs on order
- e31 maintenance of container
- e36a critical supply of US components at ROF (5/9/66)
- e40 STREP - bottle problem (perze bottle?) - if not resolved - US
bottle gets → US will solve (1)
- e47 Emergency removal tent on Revolut → REB emergency demand
- e48f -"-