Defe 19-180 French nw

e16-7 - Fr SSBN unable to penetrate Moscow ABM
+ limited range

e16-7 p04 - only part of US+Fr nuclear co-op has been reported to UK under Mildenhall Agreement

e16 p01 - US have much closer relation with Fr will regard to Oest techniques, facilities + safety

Defe 19-182 Chevaline

e61/e19/

e77-p03 - warheads (for Chv) could be based on US Poseidon warhead if US were prepared to release details.
Sup Ant could be more vulnerable to Terminal ABM than Option M

e78 p06 - Minimum range 900nm with 90% repeatability - CMSC
- if more fairing ejects delayed (a proposal) than greater.

e61 p04 - fire risk in sub environment ie missile cooperation

Defe 19-190 Poseidon

e20 p02 - Pos pref to Sup Ant - less sensitive to improvement in R ABM
Sup Ant marginally better against Fer ABM.

e25 p01 - increase in sea room brings a degregation in navigational accuracy

e26 - 'possible operations or other reduction ~~the~~ which may arise because of the introduction of a British warhead into a US system' - re warhead for Poseidon (1972

e27 p02 - may be better for UK to purchase XRI than Pos

Defe 19-191 Chevaline

~~e33~~ e03-1-p03 - leakage of air into ET317 at 180ps.

e03-1-p04 - paper on structural collapse modes if IFE subjected to certain submarine accident scenarios.

Submarine pressurisation accident scenarios - premature function of launch gas generator or opening ballast flood valve at depth.
Also more fairing could collapse under too rapid pressurisation

e03-1-p06 - concern about pos leakage from WE-177 reservoir
- reported leakage from ~~[illegible]~~ US reservoir of similar design.

Refs 19-191 cont

e05-p07 - US/UK joint surveillance ↑ Q of availability of round for proposal to extend ET317 series life from 8 yr to 12 + pos 16 yrs.

e16 - timeline for Chev decisions

e17-2-p02 - 24 hr notice - 2nd SSBN - 13 missiles for harbour

e17-2-p04 - for + against continuing with Chev.
- safety - dangerous liquid fuels + 100 pyrotechnique devices + low energy ignition; leak alarm - could require seamen to flood tube → then with missile in flooded tube - problem of jettisoning or unloading ~~damaged~~ damaged missile.

e17-2-p06 - could meet NATO targeting without Ch.
+ when ~~with~~ 2SSBN air - "we would achieve the Moscow criteria".
- argument for more modest improvement than Ch

e17-2-p10 - max range 1919 nm

e23-1-p07 - PAC propulsion unit has to produce 3 separate burns in liquid motor addition to the ejection burn (+ solid motor)
+ change of centre of gravity when RES ejected.
- technical risks in UK development of solid fuelled PAC too great

e23-1-p11 - option inc 5 washington opt (Fr/5 SSBN)

e23-5-p06 - leakage of air into ET317 in SSBN launch tube ~~m~~ detected by capsule pressure measurement at Coulport

e23-6-p01 - 16/6/75 - test has demonstrated new warhead for Chev

e24-2-p02 - General Electric producing 200 EBW for Chev

e24-2-p03 - Removal of 4 decoys would result in loss of 0.4 of a penetration; range 1965 nm

Defe 19-208

e 05-2-pol - 1 sub on pol - 'well over 30 warheads could be delivered on targets undefended by ABM' with current Pol.

Purpose of SSBN

a) a Br contribution to the NATO deterrent in which role the missiles are assigned to SACEUR + targeted in accordance with NATO plans against military targets in Eastern Europe.

b) a national deterrent for use in circumstances where either NATO is not operative or supreme national interest are at stake.

Future Operational Availability of the SSBN Force - hand written

e 05-1-p02 - difficulties in relying on deployment of 2nd SSBN from harbour -

(a) Until it sailed - vulnerable to nuclear, conventional or clandestine attack

(b) An operating mode which deployed one boat continually on patrol but which relied for its deterrent capability on the deployment of a second submarine from harbour would be damaging to morale. SSBN crews would know that their normal deployment was largely valueless as a deterrent until they were joined by the second SSBN. The rationale for maintaining any SSBNs at sea for long + arduous patrols would be brought into doubt.

[- but assumes only det is ~~[illegible]~~ UK plan - not NATO]

(c) A reinforced patrol could not be held indefinitely

e 05-2-p02 - 2nd centre ; without UK nw -

"nuclear hegemony in Europe would pass to the French. This is a situation which neither we nor the American would wish to arise.

To be an effective strategy det - UK SSBN force must be

(a) under national control

(b) provide an assured 2nd strike capability - ie invulnerable

(c) sufficient missile at readiness for continuous threat

(d) be capable of delivering as many warheads as are required to inflict unacceptable damage to the chosen target area

Defe 19-208 cont

e05-2-04

- by 1975 Rus radar complete → would have to deploy SSBN to Med to outflank; + radar would cover Med by 1977

"there is no reasonable doubt that the Polaris A3T missile fired from within Russian radar cover would fail to deliver warhead to the Moscow target area;"

- 1 ABM would destroy a ~~missile~~ warhead within 50/100 miles of it.

e05-2-p07 - options -

a) abandon UK SNF b) current c) Sup Ant

p08

(a) Would save £40m/yr (same in $); 1/2 coulp not needed or Dec → fully saving in op + sup costs

Would retain Fas + Ros for SSN + SSN refits

"The prospects of such savings are attractive but the price would be the loss of the UK's special contribution to NATO; of the insurance against a future possible decrease in the credibility of the Arctic nuclear umbrella; + of the ultimate guarantee of national security against a nuclear threat"

+ Fr only Eur nuc power; UK pos in NATO weaker; NATO would seek greater UK conv commitment

p09 - (b) Would result in UKs pow weakening vs Fr

e07-p02 - ~~cont~~ 'price' could lead to debate on whether main purpose is NATO or national.

e12-1-p01 -

"In the light of current pressure on the Defence Budget, to investigate what level of ..." by handing 3 warheads.

e12-1-p06 - Pol A3T - max rang 2400nm min 500nm

Sup Ant - 1975 1100

e12-1-p08 - adjusting tilt would increase CEP from 0.4nm (A3T) to 1 nm or more

- ~~con~~ redacted line on targets - to grave cep would not affect xxx .. or national) - poss refer to command burden.

e12-1-p13 - handed option - 2100nm range; (1nm - 2000mile² sea room)

- lose 600k mile² or 1/3 of available patrol area.

harden → Sup Ant - lose 260k mile² or 1/8 — " —

range 1975nm

Sov WE777B Sea
Cruise Ch

Defe 19 208

e20-1 - 3 boat outlook will release more ET317s

e28-1-p06 - removal of 4 soft + 2 hard decays would save 20 kg

p08 - 3 boat concept + release of 60 ET317s needed during 1976

e46-0-p01 - Sprintski and SHOX - 'no capability against Sprintski

e46-2-p05 - initiation of a nuclear event must be inhibited by 3 safety breaks
an event which could lead to loss of submarine (eg accidental start of
a gas generator system) must be inhibited by 2 safety breaks.

e46-2-p06 - 'chilling the W/H drawings by end 1974'

p07 - first 9 rounds, 4 for acceptance trials; first tactical assembly will be
10th.

e47-2-p02 - amend 'DT' to 'tritium'

p03 - EDC32 explore - sensitive to cold (<0°C) - under KH793
∴ for chevalier; also refer to Hamlet design (Chev pinning)

p04 - proposal for testing between patrols rejected on safety grounds
SSP says that leakage of liquid fuel cannot occur - but
Crite still concerned.

p05 - Ch - type E fuzehead & type E fuze + SR44 ignition

e48-1-p02 - re 3 boatloads; until the poly was 4 boatloads

e50-0-p01 - releasing 1 boatload of A3T warhead for breakdown for Ch
- value of material released £40-70m.

e50-2-p03 - Hamlet - sealing arrangement important - because this determined
need for compatibility between explode material + rest of primary;

e59-2 Charts of Chev speed / time