**By Dr Carlo Kopp**

**MELBOURNE – USAF is studying retrofitting the B-1B bomber fleet with super sonic-cruise F119 engines. The F/A-22A is the sole user of super sonic-cruise engines. The Raptor’s expected evolution into the larger delta wing FB-22A strike fighter will re-tain the supercruise capability.**

Supercruise is the capability to sustain indefinitely supersonic speeds with after burner. With supercruise, an air craft is freed from the high fuel con sumption of after burning supersonic dashes that can drain tanks dry in min utes.

There are two pre-requisites. The air craft must have very low super sonic drag, achieved by wing sweep, area rudi ng and in ter nal fuel and stores car ri age. It also needs an en gine ca pa ble of sus tain ing the very high turb in e in let tem per a tures re quired for high dry thrust rat ings at high al ti tudes.

USAF iden tified supercruise tur bofan es as a key tech nol ogy and heavily in vested to de vel op the P&W F119-PW-100. The Ad vanced Tac ti cal Fighter was in tended to supercruise be fore it ab sorbed stealth, inte grated avion ics and other new-generation features.

In air com bat, a supercruising fighter has an en ergy ad vant age over any con vention al op pon ent. En ergy is life. A supercruising fighter can en gage or dis en gage at will. No con vention al fighter can run it down or match its sus tained speed.

Air-to-air mis sile range is im proved as the height/speed at launch is much higher.

In com bat air pa trol, the abil ity to in ter cep t across an area at Mach 1.6 rather than Mach 0.85 effec tively quads up the foot print. A sin gle supercruising fighter does the work of four con vention al fighters.

**Interceptor roles** supercruise ex tends the range at which an in bound threat can be en gaged through a sus tained super sonic dash. In many sit uations ground alert in ter cep tors can be used rather than air borne CAPs.

US an ats have also iden tified the value of supercruise in strike.
**Ju bi lee of French di sas ter**

**DIEN BIEN PHU CITY – Thou -
sands of vet er ans from both sides are mak ing the pil grim age to this town,
about 490 km north west of the cap i -
tal Ha noi and the scene of the de -
feat 50 years ago which drove France
from what was then Indo-China.

Sur rounded by rice fields and
nes ted in mist-shrouded moun -
tains, Dien Bien Phu does n’t look like a
bat tle field.

Gen eral Vo Nguyen Giap’s
ac counts of the bat tle say 16,000 en -
emy troops were killed, injured or
captured. The Viet Minh lost about
10,000, he says.

To day, a hill of fers a pan oramic
view of fields, houses and military
cemeteries and provides an indica -
tion of the amaz ing feat by the Viet
Minh in haul ing 105mm ar ti l -
lery pieces and anti-aircraft guns through
steep, densely jungled moun -
tains.

French vet er ans are also trick ling
into the town, whose main bou le -
vard is named “7 May”.

**Planemakers need a shed**

**TOULOUSE –** Airbus last week
com mis sioned its as sem bly build ing
for the dou ble-deck A380. The
Airbus A380 as sem bly build ing, one
of the big gest in the world, me as ures
490m by 250 m, 46 m high.

It is the biggest of several build -
ings on the site which, to get her, in cor -
porate more than 32,000 tonnes of steel –
the equiva lent of four Eiffel tow ers – plus 250,000 cu bic metres of
con cre te.

Airbus A380 sec tions are joined
toget her at a sin gle sta tion – an Airbus
first – with the air craft mov ing on its
own wheels into one of three sta -
tions in an other part of the build ing for test -
ing. The fa cility incorpo rates room
for ex pan sion, with a sec ond A380
as sem bly sta tion and a fur ther three
test-stations, ini tially to be han gars.

Other build ings on the site in clude
the Airbus A380 static-test fa cility
and a gen er al pur pose han gar. The
site will later also be equipped with
park ing for 10 A380s. The to tal in -
vest ment is €360 mil lion.

**In pen e trat ing air de fences, su -
per sonic cruise per mits a bom ber
to fly out side the ki ne matic en ve -
lope of most SAM sys tems – the
com bi na tion of Mach 1.5 class
speed and 50,000 ft al ti tudes de -
feats all but the larg est SAMs, sh"