

Joint Strike Fighter, F-35 kampflyet

× Det fælles kampfly eller de fælles kampfly fordi der er flere varianter af flyet, aktuelt under udvikling.

The Joint Strike Fighter, or Joint Strike Fighters, because there are several variants of the aircraft currently under development.

Af Holger Terp

Problemformulering

Hvad er det nye kampfly og dets pris?

Projektbeskrivelse, fabrikkerne, atomvåben, beslutningsgrundlaget, priser, prisstigninger, luft- og støjforurening samt flysikkerhed og software.

Projektbeskrivelse

Er det militært, er det dyrt.

Is it militarily, it is expensive.

USA har lige siden opfindelsen og produktionen af atomvåben under og efter anden verdenskrig været den ubestridt største militærmagt i verden.¹ Med den aktuelle vedtagelse af finansloven for 2017 på forsvarsområdet har landet verdens største militærrelaterede udgifter², verdens største militærindustrielle kompleks og verdens største våbenbutik med både store og små våben samt avanceret teknologi på hylderne og i lagrene. Selv om at næsten hele våbensmedjen med tiden er blevet privatiseret er der ikke helt frit slag på alle hylder i våbenbutikken. Kernevåben er stadig monopoliserede og andre våben så som kemiske og biologiske våben er genstande for internationalt salgsbegrænsende aktiviteter som også omfatter våben og ammunition så som landminer og produkter med dobbelt anvendelse.

¹ Bogholderiinteresserede kan eksempelvis se, Global Firepower, 2016.

- <http://www.globalfirepower.com/>

² A Bill: Making appropriations for the Department of Defense for the fiscal year ending September 30, 2017, and for other purposes, 2016.

House Appropriations Committee Approves Fiscal Year 2017 Defense Bill. Washington, May 17, 2016.

The House Appropriations Committee today approved the fiscal year 2017 Defense Appropriations bill. The legislation funds critical national security needs, including military operations and readiness programs, as well as health and quality-of-life programs for our troops and military families.

Forudsætningerne for al våbenhandel har altid været militarisme, nationalisme, kapitalisme, samt, en konstant udvikling og aktualisering af fjendebilleder. Brændstoffet der smører og holder alle hjulene i gang er opfindelser og teknologiudvikling.

Handlen kan være lovlig eller ulovlig og den finansieres ofte via lån, formidlet af mere eller mindre offentlige eksportkreditagenturer. Her er der virkeligt tale om big business med økonomiske beløb af astronomiske størrelsesordener. Alene det amerikanske forsvarsministeriums årlige indkøbslister er kostbare og omfattende³ blandt andet fordi nye våbensystemers udviklingsomkostninger undervurderes ofte med helt op til mellem 20 og 30 %⁴. Den føderale amerikanske regerings høje prioritering af denne militærpolitik har medført enorme budgetunderskud på finanslovene. USA har været i gæld stort set i hele perioden siden anden verdenskrig og det er der to årsager til: oprustningen og deltagelse i [krige](#). Hold på hat og briller. Ifølge den amerikanske kongres forskningstjeneste har den lovgivende forsamling i Washington DC,

*'With enactment of the FY2014 Consolidated Appropriations Act on January 1, 2014 (H.R. 3547/P.L. 113-73), Congress has approved appropriations for the past 13 years of war that total \$1.6 trillion for military operations, base support, weapons maintenance, training of Afghan and Iraq security forces, reconstruction, foreign aid, embassy costs, and veterans' health care for the war operations initiated since the 9/11 attacks.'*⁵

USAs samlede befolkningstal var i 2014, 318,9 millioner.

Hvad kunne befolkningen dog have fået i stedet for, for de mange penge der blev brugt af militæret?

Hvad skal det nytte?

Paradoksalt nok, har denne satsning ikke løst de sikkerhedspolitiske problemstillinger og det kan den heller ikke. Sikkerhedspolitikken er kun blevet forværret indenfor de seneste generationer, Balkan, Rwanda, Irak, Libyen, Syrien osv. Militært baserede forsvar er sjældent betryggende og mili-

³ United States Department of Defense Fiscal Year 2015 Budget Request FY 2015 Program Acquisition Cost by Weapon System.

⁴ Congressional Budget Office: [Prospects for DoD's Budget Over the Next Decade: Vision Strategic Planning Forum](#), 2016. / : Matthew Goldberg.

⁵ CRS: [The Cost of Iraq, Afghanistan, and Other Global War on Terror Operations Since 9/11](#). / : Amy Belasco, 2014.

tært forbrug er ikke sat i verden for at løse sikkerhedspolitiske problemer. Dertil anvendes diplomater. Det vigtigste formål med det militære forbrug er ud over profithensyn, at skabe og bevare politisk indflydelse (geopolitik) og reducere de offentlige værdier, således, at der skabes relativ fattigdom. Dette har vi ikke råd til og dette har vi slet ikke råd til, lyder det bestandigt fra ansvarlige og bekymrede ministre, der gerne ser fattige som billig arbejdskraft eller som løntrykkere.

Våbenindustriens historie frem til og med F-16 er godt beskrevet af den britiske forfatter Anthony Sampson i værket Våbenhandel. Gyldendal, 1978.

USA og dets allieredes militærudgifter er, ifølge de internationale fredsforskningsinstitutter⁶, op til ni gange større end Ruslands (Rusland har ingen venner og allierede) og amerikanske våbenfabrikkers samlede eksport er second to none.

Kongressens vedtagne finanslov for 2017 finansierer bl.a.:

The legislation meets the overall defense spending limits set by law for fiscal year 2017, providing \$517.1 billion in discretionary funding – an increase of \$3 billion above the fiscal year 2016 enacted level and \$587 million below the President’s budget request. The bill also provides \$58.6 billion in Overseas Contingency Operations (OCO)/Global War on Terrorism (GWOT) funding – the level allowed under current law.

Following the lead of the House Armed Services Committee-approved National Defense Authorization Act of 2017, the legislation targets approximately \$16 billion of this OCO/GWOT funding to meet needs within the base Pentagon budget.

Equipment Procurement – The legislation provides a total of \$120.8 billion – \$111.5 billion for base requirements and \$9.4 billion for OCO/GWOT requirements – for equipment and upgrades. Funding for base requirements is \$9.6 billion above the request and \$644 million above fiscal year 2016. These funds support our nation’s military readiness by providing the necessary platforms, weapons, and other equipment our military needs to train, maintain the force, and conduct successful operations.

⁶ [Trends in World Military Expenditure, 2014.](#) / : Sam Perlo-Freeman, et al. SIPRI Fact Sheet, 2015.

For example, the bill includes: \$21.6 billion to procure 15 Navy ships, including two DDG-51 guided missile destroyers and three Littoral Combat Ships; \$8.3 billion for 74 F-35 aircraft; \$1.35 billion for 16 F/A-18E/F Super Hornet aircraft; \$1.2 billion for 72 UH-60 Blackhawk helicopters; \$881 million for 52 remanufactured AH-64 helicopters and \$374 million for 10 new aircraft; \$689 million for 27 CH-47 Chinook helicopters; \$1.8 billion for 11 P-8A Poseidon aircraft; \$2.8 billion for 15 KC-46 tanker aircraft; \$440 million for 123 Stryker Double V-Hull upgrades; and \$332 million for the Israeli Cooperative Programs.

Joint Strike Fighter, F-35 kampflyprogrammet

'The largest procurement program in the Department of Defense (DOD), the F-35 Joint Strike Fighter (JSF), also called the Lightning II, is a strike fighter aircraft being procured in different versions for the United States Air Force, Marine Corps, and Navy. Current DOD plans call for acquiring a total of 2,457 JSFs.⁷ Hundreds of additional F-35s are expected to be purchased by several U.S. allies, eight of which are cost-sharing partners in the program.

The F-35 promises significant advances in military capability. Like many high-technology programs before it, reaching that capability has put the program above its original budget and behind the planned schedule.

The Administration's proposed FY2015 defense budget requested about \$7.8 billion in procurement funding for the F-35 JSF program. This would fund the procurement of 26 F-35As for the Air Force, 6 F-35Bs for the Marine Corps, 2 F-35Cs for the Navy, and continuing development.⁸

⁷ Ifølge diverse amerikanske finanslove fra 1012 og fremefter samt Defence News har Pentagon rent faktisk bestilt eller planlægger at bestille i alt 454 fly. US Air Force Defers 45 F-35As Over Next Five Years. / : Lara Seligman, Defense News, February 10, 2016.

⁸ The Unaffordable F-35: Budget History and Alternatives. / : Taxpayers for Common Sense, 2014. - <http://www.taxpayer.net/library/article/f-35-resources>

FY2014 defense authorization act: The FY2014 defense authorization bill funded F-35 procurement at \$5.4 billion for 29 aircraft (19 F-35As, 6 F-35Bs, and 4 F-35Cs, as requested), plus \$561.7 million in advance procurement. The conference report accompanying the bill included language repealing some previously enacted reporting requirements for the F-35 program, and mandated a review of F-35 software development.

FY2014 defense appropriations bill: The final omnibus budget bill funded F-35 procurement at \$5.1 billion for 29 aircraft (19 F-35As, 6 F-35Bs, and 4 F-35Cs, as requested), plus \$521.7 million in advance procurement, a reduction in 3 aircraft from the Administration's advance procurement request.⁹

Lovforslag, forsvaret finansåret 2014: Den endelige udgave af finansloven finansierer F-35 indkøb på \$ 5.1 milliarder for 29 fly (19 F-35A, 6 F-35B, og fire F-35C som ønsket), plus 521.700.000 \$ til forhåndsindkøb, en reduktion på 3-fly i administrationens forudbestillingskøb.

Hvad betaler det amerikanske luftvåben for flyene?

Air Force names Tucson base as finalist for F-35

Yuma has 16 F-35Bs on site, said Marines spokeswoman Capt. Melanie Salinas. The station is slated to have 48 at full build-out. The cost of the jets has been coming down in recent years.

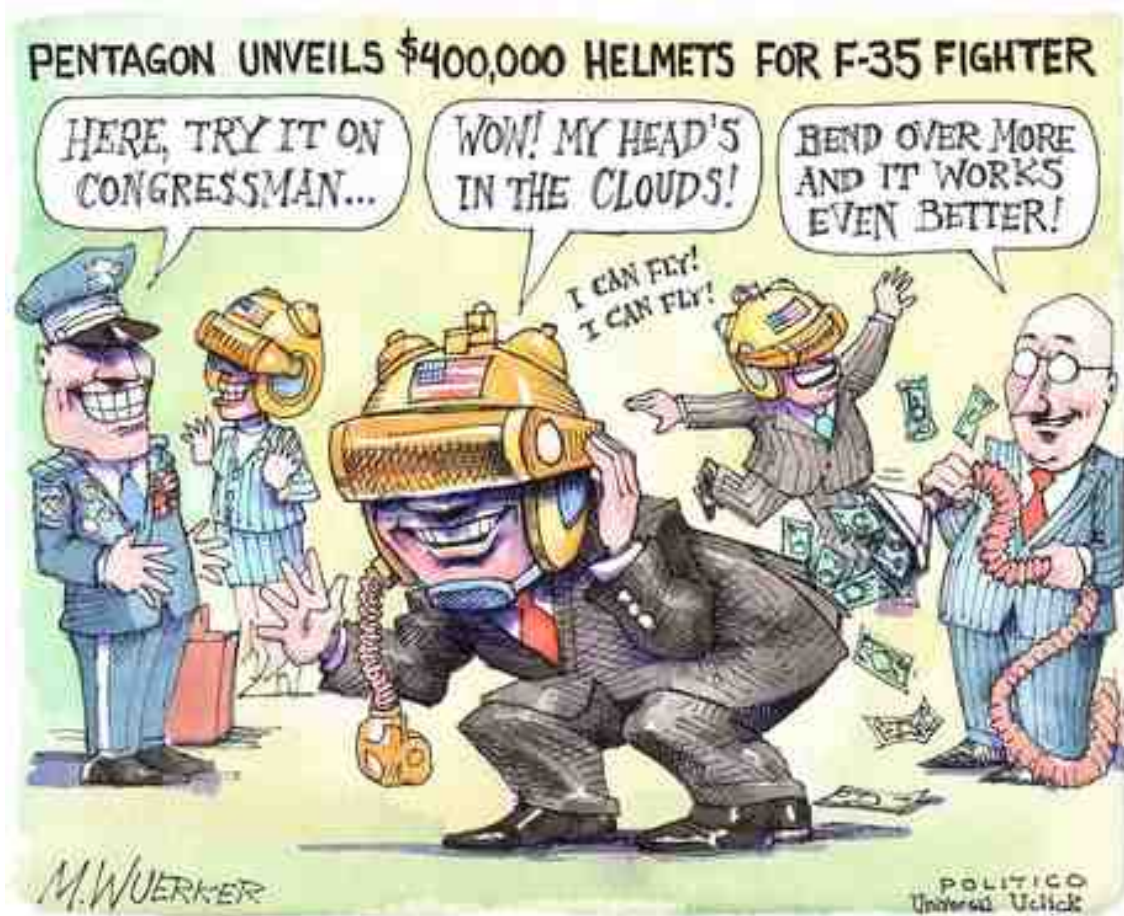
The current order of F-35As cost \$108 million each, while F-35Bs cost \$134 million each. The order for 43 planes was placed in 2014, with the first of those now coming off the assembly line in Fort Worth, Texas, said Joe DellaVedova, spokesman for the Pentagon's F-35 Joint Program Office.

The price of the next two orders, Lots 8 and 9, which will mean more than 150 jets combined, currently is under negotiation. The per-plane price is expected to be less than the 2014 per-plane price, he said.¹⁰

"Latest F-35 Unit Costs Now Exceed \$223 million," Defense-Aerospace.com; 19 December 2012,¹¹

⁹ CRS: F-35 Joint Strike Fighter (JSF) Program. / : Jeremiah Gertler, 2014.

¹⁰ <http://www.azcentral.com/story/news/local/arizona/2016/04/15/davis-monthan-air-force-base-finalist-f-35-tucson/83031818/>



Fabrikerne

Flyet er et amerikansk/britisk jagerfly udviklet hos våbenfabrikkerne Lockheed Martin og General Dynamics i samarbejde med fabrikker i [Australi-](#)

¹¹ Before the Cut: The Global Politics of the F-35 Joint Strike Fighter. / : Srdjan Vucetic. Prepared for CIPSS/CEPSI Workshop on International Cooperation. McGill University. Presented March 28, 2013. <http://cepsi-cipss.ca/wp-content/uploads/2013/06/Srdjan-Vucetic-Before-the-Cut.pdf>

en¹², Canada, Danmark, Holland¹³, Italien¹⁴, Kina, Norge, Storbritannien, Tyrkiet og USA.

This study identifies 138 major F-35 contractors operating in 231 separate locations. Over half of the contractors identified – 88 – were foreign companies conducting F-35 work outside of the United States. This does not necessarily indicate that a majority of the work on the plane is being done overseas, but it does suggest substantial outsourcing of F-35 work ... Countries with the most identified production sites include Italy (36), Australia (30), the United Kingdom (24) and Turkey (12). The United Kingdom is the largest participant in terms of sheer amount of production, but the work is concentrated in fewer sites than in some other countries mentioned.

There is also evidence indicating that Northrop Grumman and Honeywell have used or produced F-35 components in China – including specialized magnets and sensor components – in violation of U.S. laws banning the use of Chinese parts in U.S. defense equipment. The companies assert that they have stopped using Chinese parts, but this issue will bear watching as production of the F-35 moves forward.¹⁵

Oprindeligt kampfly budget omkring 300 milliarder dollar. I 2013 var udgifterne steget til 323 milliarder dollar i faste 2012 priser. I foråret 2016 er de samlede udgifter vurderet af den amerikanske rigsrevision til at være i

¹² [The Joint Strike Fighter: overview and status](#). / : David Watt. Parliamentary Library, Parliament of Australia, 2012.

¹³ Den seneste hollandske budgetredegørelse er tilsyneladende fra 2012. Algemene Rekenkamer: Rapport Uitstapkosten Joint Strike Fighter, 2012

¹⁴ Den italienske debat om kampflyene er omfattende. Her er et par eksempler: Il Programma F-35 in una prospettiva italiana. / : Francesco Tosato
- https://www.cesi-italia.org/contents/Analisi/Il_Programma_F-35_in_una_prospettiva_italiana.pdf
“Il programma Joint Strike Fighter: costi, problemi ed analisi della partecipazione italiana” documento predisposto in vista della audizione alla. / : Commissione Difesa della Camera dei Deputati della Rete Italiana per il Disarmo. Audizione Campagna “Taglia le ali alle armi!” - Commissione Difesa Camera Deputati 6 marzo 2012
- <http://www.disarmo.org/nof35/docs/4029.pdf>

¹⁵ [Promising the Sky](#): Pork Barrel Politics and the F-35 Combat Aircraft. / : William D. Hartung. - Washington, DC : Center for International Policy, 2014.

nærheden af, \$400 milliarder.¹⁶ De første fly forventes i produktion omkring 2012 og de forventes operationelle 2016-2017.¹⁷

Pris pr. fly 2004 anslået til 45,2 millioner dollar. Efterfølgende er salgsprisen pr. stk. fordoblet.

Det seneste amerikanske luftvåben budget anslår en enhedsomkostning for et fabriksklar F-35A vil være US 92,3 millioner dollars (i faste 2014 dollars) i 2018.¹⁸ Altså mere end 605 millioner kroner pr. stk. efter dagens aktuelle valutakurser. I omegnen af 17 milliarder + det løse, for de 27 fly den danske regering agter at bestille. Forsvarsministeriet meddeler i, Kampfly - Regeringens indstilling, at, 'Finansieringsbehovet ved 27 JSF fly i perioden 2021-2026 udgør i størrelsesordenen 20 mia. kr.', samt at, '[s]tørstedelen af finansieringen sker ved anvendelse af råderum under materielplanen. Råderum under materielplanen 2018-2026 udgør ca. 13,4 mia. kr.. Derudover fremrykkes 0,9 mia. kr. af råderummet under materielplanen fra 2027.' Hvordan dette regnestykke hænger sammen må guderne eller revisorerne vide og Forsvarsministeriet gør det ikke nemt for økonomerne.

For, oplysningerne om URF-priser pr. stel i, Typevalg af Danmarks kommende kampfly, er klassificeret!

URF-priserne er ifølge ministeriets rapport, 'Unit Recurring Flyaway Cost'¹⁹ (URF-pris). URF-prisen angiver prisen for ét fly i basiskonfiguration inkl. motor, men uden støtteudstyr, missionsspecifikt udstyr, reservedele med videre.' Det svarer til at Skatteministeriet køber en computer, der kun er udstyret med et operativsystem, men uden regneark, databaser og kontorpakker, som skal købes efterfølgende, hvilket gør, at de samlede anskaffelsesomkostninger og driftsomkostninger først kan opgøres og revideres efter de samlede indkøb er foretaget. Hemmeligholdelsen af prisen på de fabriksnye fly antyder dog i det mindste på, at ministeriet er i besiddelse af en prisliste

¹⁶ GAO: F-35 Joint Strike Fighter: Preliminary Observations on Program Progress, 2016. 'Currently, the program has around 20 percent of development testing remaining.'

¹⁷ Noget af den aktuelle udvikling af F-35 Joint Strike Fighter (JSF), fremgår af de årlige Director, Operational Test and Evaluation FY 2015 Annual Report, kapitlet om, Test Planning, Activity, and Assessment
- <http://www.dote.osd.mil/pub/reports/FY2015/>

¹⁸ Department of Defense Fiscal Year (FY) 2015 Budget Estimates March 2014. Air Force Justification Book Volume 1: Aircraft Procurement, Air Force Fiscal Year 2015 Air Force Budget Materials.
- <http://www.saffm.hq.af.mil/budget/pbfy15.asp>

¹⁹ Flyaway Costs: Omkostninger til at producere fabriksklart militært isenkram. Et begreb, der oprindeligt er forbundet med fly.

men ikke vil ud med den. Derved sløres prisen og resten af de økonomiske oplysninger i danske medier er indtil videre at betragte som mere eller mindre seriøse gætterier.

Australierne forventer en gennemsnitspris stk. pris på 110 millioner US dollar for de første 12 fly. Mere herom senere.

Ifølge Politiken er den forventet pris for de 27 kampfly 570 millioner kroner stykket. "Det vurderes, at hvert kampfly kan komme til at koste omkring 1 milliard i indkøbspris, hvilket vil sige 27 milliarder i alt. Samlet set kan prisen ende på over 100 milliarder kroner, når drift og vedligeholdelse tælles med", skriver Enhedslisten på sin hjemmeside. Totalomkostningerne er i alt 56,4 milliarder for nye kampfly, oplyser forsvarsminister Peter Christensen, ifølge Informations referat. 12. maj 2016.

De lande, der har forudbestilt kampflyet er:

Australien, Canada, Danmark, Holland, Israel, Italien, Japan, Norge, Storbritannien, Sydkorea, Tyrkiet og USA.

Ifølge den norske regerings hjemmeside: Hva koster egentlig nye kampfly?

'Flyantallet er inntil 48 fly med tillegg av 4 fly til bruk for treningsformål i USA.

Anskaffelseskostnader: 69,7 milliarder i 2016-kroner.'

Men,

'Levetidskostnader: 261,3 milliarder 2016-kroner (inkluderer anskaffelseskostnadene).'

Anskaffelseskostnadene for F-35 er beregnet å være 69,7 milliarder reelle 2016-kroner etter at økte kostnader for JSM er regnet med. Dette skal ikke bare betale for flyene, men skal også dekke alle kostnader direkte relatert til å stille en ny kampflykapasitet ferdig og klar til overtakelse for Luftforsvaret når anskaffelsesperioden er over. Da må man også anskaffe våpnene og alt utstyret og de første reservedelene som skal brukes for å vedlikeholde flyene. Vi skal også betale for integrasjonen av de riktige våpnene til flyet og anskaffe et helt nytt simulatoranlegg for å sikre at vi kan trene og operere med flyene mest mulig effektivt. Det er prisen for alt dette som uttrykkes i begrepet "anskaffelseskostnad."

Kvalitetsvurderinger

'From mid-2012 until early 2013, the DoD Office of Inspector General (OIG) performed a quality management system evaluation of the F-35 Program at Lockheed Martin and its major subcontractors. This evaluation resulted in 363 nonconformities to the AS9100 standard. Eighty-seven of these nonconformities were written against Lockheed Martin; 63 were documented at Lockheed Martin, Fort Worth, Texas and 24 were documented at its subcontractor sites. The remaining 276 nonconformities documented during our previous evaluation were written against Northrop Grumman; BAE; Honeywell Aerospace; L-3 Display Systems; and United Technologies Corporation, Aerospace Systems (UTAS), and were not included in this evaluation. All nonconformities were categorized as major, minor, or an opportunity for improvement (OFI), in accordance with AS9101, "Quality Management Systems – Audit Requirements for Aviation, Space, and Defense Organizations." Of the 63 nonconformities that were directed to Lockheed Martin at its Fort Worth, Texas, facility, 23 were categorized as major and 40 were categorized as minor.

Current F-35 Program Quality Management Performance

Results of AS9100 Conformance Inspection at Lockheed Martin, Fort Worth, Texas Our inspection at Lockheed Martin, Fort Worth, Texas from late September 2014 through early October 2014 resulted in 61 nonconformities that identified weaknesses in the F-35 Program's implementation of the AS9100 quality management system. Of these, 52 were written against Lockheed Martin and were categorized as 24 major, 26 minor, and 2 OFIs. Four nonconformities were written against JPO: two major and two OFIs. In addition, five were written against DCMA: one major and four minor.²⁰

Virker kampflyet?

²⁰ [F-35 Lightning II Program Quality Assurance and Corrective Action Evaluation](#). / : Inspector General U.S. Department of Defense, 2015.

Test pilot admits the F-35 can't dogfight: New stealth fighter is dead meat in an air battle.²¹

*'In this paper, we assess the capabilities of the F-35 and show how the aircraft is mismatched to meet emerging threats. Considered alongside the exorbitant cost of the program, this capability mismatch entails that it would be unsound to maintain a full-scale commitment to the F-35 program and that alternatives to the full program should be studied and, ultimately, selected.'*²²

²¹ - <https://warisboring.com/test-pilot-admits-the-f-35-can-t-dogfight-cdb9d11a875?gi=995a8921e721>

²² Thunder without Lightning: The High Costs and Limited Benefits of the F-35 Program. / : Bill French with Daniel Edgren. The National Security Network, 2015.- http://nsnetwork.org/cms/assets/uploads/2015/08/F-35_FINAL.pdf

GAO: F-35 Joint Strike Fighter : DOD Needs to Complete Developmental Testing Before Making Significant New Investments, 2017.

- <http://www.gao.gov/assets/690/684207.pdf>

For years we've reported on the F-35 program's cost and schedule overruns, knowledge gaps, and performance issues. Although DOD has taken a number of steps to address these concerns, the department continues to struggle to keep the development costs for the baseline aircraft in check—raising questions about DOD's plan to make significant investments in developing new F-35 capabilities. Our recommendation? Before committing dollars to future F-35 capabilities, DOD should complete development of the baseline aircraft.

Atomvåben

Europæiske Joint Strike Fighters skal kunne medføre taktiske atomvåben.

*'In addition to increasing the capability of the bombs in Europe, some of the delivery vehicles are also slated for a significant modernization. The F-35 Lightning II, also known as the Joint Strike Fighter (JSF), will replace the F-16 as carrier of the B61 nuclear bomb. The F-35 has significantly greater capabilities than the F-16, including stealth. Each F-35 will be able to carry two B61-12s internally. Delivery was initially scheduled to begin in 2014, but the NPR delayed it to 2017. Due to delays caused by budget constraints and development issues, the Air Force now "intends to deliver nuclear capability to all JSFs in Europe in the 2020 time frame via the Block IV upgrade."*²³

Og fra hestens egen mund:

*'The Air Force will retain a dual-capable fighter (the capability to deliver both conventional and nuclear weapons) as it replaces F-16s with the F-35 Joint Strike Fighter. As described in more detail below, the United States will also conduct a full scope B-61 (nuclear bomb) Life Extension Program to ensure its functionality with the F-35 and to include making surety – safety, security, and use control – enhancements to maintain confidence in the B-61.'*²⁴

Tre af de stater der har bestilt kampflyet er i besiddelse af kernevåben: Israel, Storbritannien og USA. Storbritannien har dog kun atomvåben placeret på ubåde. Der er amerikanske atomvåben i Holland og i Italien²⁵.

²³ Non-Strategic Nuclear Weapons. / : Hans M. Kristensen. Federation of American Scientists, Special Report No 3, May 2012 s. 27.

²⁴ Nuclear Posture Review Report. / : US Department of Defense, 2010.

The B61 family of nuclear bombs. / : Hans M. Kristensen, Robert S. Norris.

2014 Nuclear notebook. Bulletin of the Atomic Scientists Volume 70 Issue 3

'The weapon's overall price tag is expected to exceed \$10 billion, with each B61-12 estimated to cost more than the value of its weight in gold.'

²⁵ U.S. Nuclear Weapons in Europe. / : Hans M. Kristensen. Natural Resources Defense Council, 2005 - <https://www.nrdc.org/sites/default/files/euro.pdf>

Beslutningsgrundlaget

Oplysninger om Joint Strike Fighter er stadig klassificeret eller maskeret.

Manglende sikkerhedspolitisk debat om kampflyenes fremtidige nytte og anvendelse, samt, manglende debat om eventuelle forsvarspolitiske alternativer. Og der er også en manglende økonomisk debat. Har vi råd til flyene?

Er der overhovedet brug for et dansk luftvåben fremover? Den sikkerhedspolitiske situation i den sidste generation har jo vist, at der ikke var brug for danske ubåde, så som Sælen. Er droner et reelt alternativ til kampfly?

Canadiske embedsmænds beslutningsgrundlag var yderst kritisabel.

*'There were significant weaknesses in the decision-making process used by National Defence in acquiring the F-35 to replace the CF-18. By the end of 2006, the Department was actively involved in developing the F-35, and a number of activities had put in motion its eventual procurement. In the lead-up to the government's 2010 announcement, required documents were prepared and key steps were taken out of sequence. Key decisions were made without required approvals or supporting documentation.'*²⁶

Priser og økonomi

Noget usædvanligt er stykprisen på kampflyene afhængig af, hvor mange der bliver solgt og hvor store udviklingsomkostningerne i det lange løb er. Den politiske beslutningsproces i de forskellige lande der er med i projektet er meget forskellige. Canadiske politikere overvejer om de overhovedet vil være med. Hollænderne har sænket deres forhåndsbestillinger fra 85 til 37 og amerikanerne har givet afkald på tre fly.

'In June 2012 the [Australian] Minister for Defence provided more detail about funding of the JSF:

With reference to the acquisition of the first two F-35s:

(a) Australia's first two aircraft are likely to cost about \$130 million each in 2012 prices at a 1.03 United States exchange rate.

²⁶ Report of the Auditor General of Canada to the House of Commons Spring 2012: Chapter 2: [Replacing Canada's Fighter Jets](#).

- (b) The acquisition includes materiel and support to facilitate United States-based training operations, and includes, but is not limited to:*
- (i) base and range support;*
 - (ii) fuel, oils and other consumables;*
 - (ii) training expendables (weapons and countermeasures); and*
 - (iii) student training courses.*
- (2) With reference to the acquisition of a further 12 F-35s:*
- (a) The average cost for the first 12 F-35s is expected to be about \$110 million each (2012 prices at a 1.03 United States exchange).¹²⁷*

De fleste økonomiske analyser af kampfly projekterne med et tidsperspektiv frem til 2030 eller senere, er alle udarbejdet af den amerikanske rigsrevision, United States Government Accountability Office, eksempelvis:

'The F-35 Joint Strike Fighter program had to make unexpected changes to its development and test plans over the last year, largely in response to a structural failure on a durability test aircraft, an engine failure, and software challenges. At the same time, engine reliability is poor and has a long way to go to meet program goals. With nearly 2 years and 40 percent of developmental testing to go, more technical problems are likely.

Addressing new problems and improving engine reliability may require additional design changes and retrofits. Meanwhile, the Department of Defense (DOD) has plans to increase annual aircraft procurement from 38 to 90 over the next 5 years. As GAO has previously reported, increasing production while concurrently developing and testing creates risk and could result in additional cost growth and schedule delays in the future.

²⁷ The Joint Strike Fighter: overview and status. / : David Watt. Parliamentary Library, Parliament of Australia, 2012.

Cost and affordability challenges remain. DOD plans to significantly increase annual F-35 funding from around \$8 billion to nearly \$12 billion over the next 5 years reaching \$14 billion in 2022 and remaining between \$14 and \$15 billion for nearly a decade. Over the last year, DOD reduced near-term aircraft procurement by 4 aircraft, largely due to budget constraints. While these deferrals may lower annual near-term funding needs, they will likely increase the cost of aircraft procured in that time frame and may increase funding liability in the future. It is unlikely the program will be able to sustain such a high level of annual funding and if required funding levels are not reached, the program's procurement plan may not be affordable. DOD policy requires affordability analyses to inform long-term investment decisions. The consistent changes in F-35 procurement plans indicate that DOD's prior analyses did not adequately account for future technical and funding uncertainty.¹²⁸

Produktionen af F-35 udsat

Ifølge Pentagon, refereret af Defense News, udskydes de sidste tests med F-35 fra sommeren 2017 til et ubestemt tidspunkt i 2018, hvorefter produktion i stor skala forventes iværksat, hvis test skemaet ikke skrider yderligere.²⁹

²⁸ GAO: F-35 Joint Strike Fighter: [Assessment Needed to Address Affordability Challenges](#), 2015.

²⁹ Final F-35 Testing Slips To 2018. Lara Seligman, Defense News, May 25, 2016.

Kendall: F-35 Program Shows 'Continuing Progress in All Aspects'. / : Lisa Ferdinando, DoD News, Defense Media Activity

WASHINGTON, May 26, 2016 — The F-35 Lightning II joint strike fighter program is on track and demonstrating "continuing progress in all aspects," Frank Kendall, undersecretary of defense for acquisition, technology and logistics, said May 24.

Kendall spoke during a conference call with reporters after an F-35 chief executive officer roundtable meeting in Phoenix. "There has been no change in our schedule expectations to note," he said.

The F-35 is expected to be ready for its final test phase in 2018, Kendall said.

"We reviewed the status of operational test planning, there is a consensus that is likely to occur in calendar year 2018, given the realities of the schedule at this time," he said. Flexibility is the key, Kendall said, as the program moves forward.

Sammenligningsgrundlag med et tidligere kampfly program

Air Force F-22 Fighter Program

Procurement of Air Force F-22 Raptor fighters began in FY1999, and a total of 195 (177 production aircraft, 16 test aircraft, and 2 development aircraft) were procured through FY2009. In the FY2010 budget, the Administration proposed to end F-22 procurement at 187, and Congress approved that termination. The F-22 assembly line in Marietta, GA, has been shut down, with its tools and equipment placed in storage.

Since 2010, operational issues have arisen. Following a November 2010 fatal crash of an F-22 in Alaska, the Air Force recorded at least 25 “physiological incidents” of F-22 pilots reporting hypoxia-like symptoms while flying, possibly indicating oxygen deprivation. Following a lengthy investigation and grounding of the F-22 fleet, the Air Force attributed the oxygen deprivation to “a ‘mosaic’ of interrelated cockpit equipment issues.” Following corrective actions, the F-22 fleet has returned to the air.³⁰

Selv ikke i USA har politikerne etableret faste rammer for våbenindkøb over længere årrækker.³¹ Også dele af projektets økonomi er af forskellige grunde klassificeret eller maskeret, gennemsigtigheden er ikke stor.

The original planning assumption of 150 aircraft is not expected to be realised.⁵⁴ In July 2012 the Government has committed to 48 aircraft but has refused to be drawn on the total number of aircraft it expects to order.

³⁰ CRS: Air Force F-22 Fighter Program. / : Jeremiah Gertler, 2013.

³¹ CRS: Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress. / : Ronald O'Rourke, Moshe Schwartz, 2016.

The Government has refused to be drawn on the likely overall total cost, citing concerns about protecting the department's commercial negotiations. Defence Equipment Minister Philip Dunne has said that while the MOD has a detailed through-life cost estimate for the programme which forecasts all Main Gates, it is withholding that information because disclosure would prejudice commercial interests.⁶⁸ In 2003 the Government estimated Government estimated the procurement cost of the JSF programme to be up to£10 billion, dependent on the number of aircraft acquired and support costs.¹³²

Og:

'The F-35 has been on political life support for the last four years, with the Office of the Secretary of Defense (OSD) and Pentagon acquisition bureaucrats investing much effort in convincing the White House, Congress and participant Allied nations that the project is an icon of virtue in the current pantheon of failed major acquisitions.

While former procurement Czar John Young went as far as to criticise the program's prior management history, he was not prepared to admit the obvious, which is that the F-35 Joint Strike Fighter now qualifies in all key respects as what project management professionals term a "non-executable project".¹³³

³² [The UK's F-35 Lightning II Joint Strike Fighter](#). / : Louisa Brooke-Holland. House of Commons Library, Standard Note: SN06278, 2015.

³³ F-35 Joint Strike Fighter Program: Collapse is a "When" Question, not an "If" Question. / : Carlo Kopp, Peter Goon. Air Power Australia NOTAM, 17th August, 2009.

Miljøvurderinger

Den amerikanske hærs ingeniørkorps har udarbejdet en operationel erklæring om F-35As grundlæggende virkninger på miljøet i 2013 i forbindelse med forslag til kampflyets kommende baser. En diger rapport på over 900 s. Af denne rapport fremgår det, at:

*'Beddown of the F-35A would change noise conditions and the type of land uses affected by aircraft noise at all alternative locations. At Burlington AGS and Mountain Home AFB, noise levels of 65 dB DNL or greater would affect a larger area than currently found under baseline conditions under any alternative scenario. At Hill AFB, the area affected by noise levels of 65 dB DNL or greater would decrease under ACC Scenarios 1 and 2, but increase slightly under ACC Scenario 3. For Jacksonville AGS and McEntire JNGB, the affected areas would decrease substantially in both scenarios. For Shaw AFB, the affected area for 65 dB DNL and greater noise levels would decrease in ACC Scenario 1, but increase in the other two scenarios. Effects on land uses in the vicinity of the bases vary depending upon location and scenario; with the exception of Burlington AGS and ACC Scenario 3 at Hill AFB, effects on residential lands would decrease or remain the same. Construction costs at the alternative locations under all scenarios would range from \$0.4M to \$51.9M.'*³⁴

De 27 nye F-35 kampfly får base på Fighter Wing Skrydstrup, hvis det står til forsvarsminister Peter Christensen (V). Det oplyser forsvarsministeriet i en mail til DR Syd. Der skal ombygges og nybygges på Flyvestation Skrydstrup for omkring 400 millioner kroner for at flyvestationen kan huse de planlagte nye F-35, skriver Forsvarsministeriet til netmediet nytkampfly.dk, refererer Ingeniøren 19. maj 2016.

Støjhelvede forude: F-35 larmer dobbelt så meget som F-16. Norsk støjmareridt koster formue: Vores broderland har fået en ekstra-regning på en lille milliard, fordi F-35 larmer så meget, at naboer til flybase må købes ud af deres huse, skriver Ekstra Bladet 4. maj 2016.

³⁴ F-35A Operational Basing Environmental Impact Statement Vol. I.

The Federal Aviation Administration identifies a DNL level of 65 as the upper limit of acceptable aircraft-generated noise levels. The Environmental Protection Agency on the other hand defines the threshold level at 55+.

Tests at Eglin AFB in Florida (the first base picked as a training site for F-35 pilots) compared the F-35 to the F-15, which it would replace at that base. Other testing shows that the level of noise produced by the F-15 is slightly louder than the F-16. The test results indicated that the noise level of an F-35 on take-off was 9 dB (SEL) louder – about twice as loud - compared with the F-15. The comparison is even worse on landings. During approach, noise from an F-35 was 19 dB higher – about 4 times as loud - than an F-15 (U.S. Air Force 2008).³⁵

Derfor,

'Thus, it is conceivable that aircraft noise is more damaging than road traffic noise for children's cognition.'³⁶

Det er således tænkeligt, at flystøj er mere skadelig end vejstøj for børns erkendelsesevne

³⁵ An evaluation of the potential loss in West Valley home values from locating F-35 at Luke Air Force Base. / : Timothy D. Hogan, Ph.D.
- <http://archive.azcentral.com/ic/community/pdf/luke-air-force-base-noise-study-0414.pdf>

³⁶ Burden of disease from environmental noise: Quantification of healthy life years lost in Europe.- Copenhagen: The WHO European Centre for Environment and Health, Bonn Office, WHO Regional Office for Europe, 2011.

Software

'The Department of Defense (DOD) is aware of risks that could affect the F-35's Autonomic Logistics Information System (ALIS), but does not have a plan to ensure that ALIS is fully functional...

ALIS may not be deployable: ALIS requires server connectivity and the necessary infrastructure to provide power to the system. The Marine Corps, which often deploys to austere locations, declared in July 2015 its ability to operate and deploy the F-35 without conducting deployability tests of ALIS. A newer version of ALIS was put into operation in the summer of 2015, but DOD has not yet completed comprehensive deployability tests. ALIS does not have redundant infrastructure: ALIS's current design results in all F-35 data produced across the U.S. fleet to be routed to a Central Point of Entry and then to ALIS's main operating unit with no backup system or redundancy. If either of these fail, it could take the entire F-35 fleet offline.¹³⁷

Det befæstede fattighus

Militære indkøb i Danmark

II. Tilrettelæggelsen af større materielanskaffelser

'2. Forsvarets større materielanskaffelser er underlagt Forsvarets Materieltjenestes ansvar. Materieltjenesten blev oprettet den 1. januar 2007 på baggrund af forsvarsforliget 2005-2009 vedrørende etableringen af forsvarets funktionelle tjenester. Materieltjenesten ligger under Forsvarskommandoens ansvarsområde. Chefen for Materieltjenesten rapporterer ligeledes til Forsvarsministeriet.¹³⁸

³⁷ GAO: F-35 Sustainment: DOD Needs a Plan to Address Risks Related to Its Central Logistics System, 2016.

³⁸ Rigsrevisionen: Notat til Statsrevisorerne om tilrettelæggelsen af en eventuel større undersøgelse af forsvarets materielanskaffelser, 2008.
- <http://www.rigsrevisionen.dk/media/1880403/a508-08.pdf>

Organisatorisk er indkøb i forsvaret spredt over flere myndigheder, hvoraf Forsvarets Materieltjeneste (FMT) og Forsvarets Bygnings- og Etablissementstjeneste (FBE) foretager hovedparten af forsvarets indkøb med henholdsvis 4,2 mia. kr. og 1,6 mia. kr. i 2010, mens andre myndigheder, herunder de tre værn og Forsvarets Koncernfælles Informatiktjeneste (FKIT), foretager det resterende indkøb.³⁹

Kampflykontoret, programkontor under Forsvarsministeriet: Nyt Kampfly Program. Til at forberede beslutningsgrundlaget for anskaffelsen af nye kampfly blev Nyt Kampfly Program oprettet i marts 2013. Nyt Kampfly Program er en integreret del af Forsvarsministeriets departement og har blandt andet haft til opgave at evaluere de tre kampflykandidater inden for fire grundlæggende områder: strategiske, militære, økonomiske og industrielle forhold.

Den samlede danske regning for de 27 kampfly anslås aktuelt i 2016 til at løbe op i 56,4 milliarder kr. altså to milliarder kr. pr. stk.

Forsvarets forbrug på indkøb var i 2010 ca. 7 mia. kr., hvilket svarer til godt 1/3 af forsvarets samlede årlige udgifter på ca. 21 mia. kr. Den samlede pris for kampflyene svarer altså til de samlede danske forsvarsudgifter i 2 ½ år. Isoleret for materielanskaffelsesbudgettet svarer det til det samlede budget i otte år. Skal der også være lidt midler med uændrede forsvarsudgifter til de andre værn, nye lastbiler og til bygningsvedligeholdelse, er kampflyene nok betalt færdigt om mellem 56 og 150 år, hvis de nuværende budgetter holder. Venstre mindretalsregeringen binder med andre ord de to næste generationer af danskere til at acceptere og videreføre partiets forsvarspolitik.

Danmark har forudbestillingsoption på 48 fly.

Statsministeriet: Pressemøde om kampfly, 11.05.16

Statsminister Lars Løkke Rasmussen og forsvarsminister Peter Christensen vil torsdag præsentere regeringens udspil til anskaffelse af nye kampfly, der skal erstatte de eksisterende F16-fly.

Regeringens udspil sker som opfølgning på forsvarsaftalen 2013-2017.

³⁹ Effektiviseringer og bedre økonomistyring - Afrapportering af budgetanalyser af forsvaret. Forsvarsministeriet: Udvalget for analyser af forsvaret, 2012.

Det ser i juni 2016 ud som om at beslutningen om anskaffelsen af de danske F-35 fly allerede er truffet i regeringen. Fem af de danske F-35 fly skal således permanent placeres i det amerikanske træningscenter på Luke Air Force Base, hvor de skal bruges til fælles pilottræning meddeler Ritzau, refereret i Information, 7. juni 2016.

En flyvsk beslutning med indbyggede usikkerheder

Aftale om anskaffelse af nye kampfly

København, den 9. juni 2016. Sakset fra Forsvarsministeriets hjemmeside. Ingen underskrifter.

Det vigtigste indhold af det tre sider lange dokument.

Der er mellem regeringen og Socialdemokraterne, Dansk Folkeparti, Liberal Alliance og Radikale Venstre indgået aftale om anskaffelse af nye kampfly til erstatning for de nuværende F-16 fly. De fremtidige danske kampfly skal være af typen F-35A Joint Strike Fighter.

Partierne bemærker, at F-35 fortsat befinder sig i udviklingsfasen, og at der følgelig er og fortsat vil være en række risici forbundet med flyets udvikling. Partierne ønsker at følge udviklingen i F-35 programmet tæt og vil løbende blive orienteret om fremdrift og risici i programmet. Anskaffelsen andrager akkumuleret over indfasningsperioden ca. 20,0 mia. kr.

Levering af fly 2021-2026: 27.

Partierne noterer sig, *at fastlæggelse af anskaffelsesomkostningen først vil ske efter kontrahering med leverandøren.* Partierne er enige om, at usikkerheder finansieres inden for Forsvarets økonomiske ramme.

I Aftale om anskaffelse af nye kampfly står der ikke en lyd om drift og vedligeholdelsesudgifter.

Dansk deltagelse i udviklingsarbejdet skyldes et initiativ fra Terma som fik Forsvarskommandoen, Erhvervsfremmestyrelsen, Dansk Industri og borgerlige politikere til at støtte projektet økonomisk i forsvarsforliget 1999. Politisk enighed mellem forsvarsforligspartierne i marts 2002 om bevilling til finansiering af jagerflyet. Memorandum of Understanding mellem Danmark og USA om dansk deltagelse i udviklingen af jagerflyet underskrives 2002. Den samlede pris for den danske deltagelse i udviklingsprojektet holdes hemmeligt. Kendte deltagende danske virksomheder 2003 - 2005:

AM3D, Corena, CSC Danmark A/S, Danish Aerotech A/S, DELTA, Falck Schmidt Defence Systems A/S, Force Technology, GateHouse A/S, GPV Group A/S, HiQ WISE A/S, IFAD?, Maersk Data Defence A/S, Printca, Systematic Software Engineering A/S, [Terma A/S](#). samt Laboratoriet for akustik ved Aalborg Universitet og RISØ.

Også kampflyets drifts og vedligeholdelsesudgifter er af gode grunde ukendte. Her må vi for at få et overblik sammenligne formodede vedligeholdelsesudgifter med den amerikanske rigsrevisions analyse af F-22 projektets fremtidige omkostninger, endda efter, at Kongressen havde standset bestillingerne på nye fly og samlebåndet var lagt i mølpose.

Flyvevåbnets omkostningsoverslag til modernisering af F-22 fly kapaciteter og til lave forbedringer, der berører flyets pålidelighed og strukturelle problemer er \$ 11.3 milliarder, frem til januar 2014. I februar 2013 tildelte Flyvevåbnet en multimillion dollar kontrakt for F-22 modernisering fra 2013 til 2023.⁴⁰

Kampflypris kan stige 25 procent: Regning på 20 milliarder kroner for F-35-fly kan vokse med en fjerdedel. Det skyldes særligt valutakursen, men også udgifter til køb og drift er usikre. / : Jacob Svendsen, Carl Emil Arnfred. *I: Politiken*, 14. maj 2016.

Efter 10 års turbulens er der stadig usikkerhed om prisen på F-35. / : Jacob Svendsen, Carl Emil Arnfred. *I: Politiken*, 14. maj 2016.

Konklusion

Kampflyet er et først og fremmest et potentielt atomvåben, den danske regering agter at købe. At flyet er fælles for en håndfuld regeringer får den betydning, at den amerikanske administration kan skubbe nogle af produktionsomkostningerne og udviklingsomkostningerne over til importørerne. Så længe kampflyet endnu ikke er færdigudviklet og der er fastsat en realistisk anskaffelsesspris er al økonomi i forbindelse med projektet usikre omkostningsoverslag og prisdækkinger. Så meget står dog fast som det er dokumenteret i denne undersøgelse. Et dansk køb af nye kampfly er på alle måder et yderst kostbart højrisikoprojekt, hvis projektet overhovedet kan gennemføresovre i det amerikanske. Købes katten i sækken? Hvis nej, er det god købmandsskab at forhale indkøbet. Det vil være klogt om de danske folketingspolitikere udsatte beslutningen om at anskaffe nye kampfly ti til

⁴⁰ GAO: F-22 Modernization: Cost and Schedule Transparency Is Improved, Further Visibility into Reliability Efforts Is Needed, 2014.

femten år, så der til den tid er vished for, at flyene fungerer optimalt efter danske behov eller om der skal et eller flere alternativer på bordet. Alt andet skaber utryghed.

Hvem skal nu betale?

Højt at flyve.

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