

(A31) MPL飛機飛航原理

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- (A) 1. 機翼的失速攻角保持恆定，與何者無關？
(A)重量，動壓，坡度或俯仰姿態 (B)動壓，但隨著重量，坡度及俯仰姿態而改變 (C)重量及俯仰姿態，但隨著動壓及坡度而改變

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- (A) 2. 失速速度受那些因素影響？
(A)重量，負荷因數及動力 (B)負荷因數，攻角及動力 (C)攻角，重量及空氣密度

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- (A) 3. 飛機失速是在相同的
(A)攻角，與相對於地平線的姿態無關 (B)空速，與相對於地平線的姿態無關 (C)攻角及相對於地平線的姿態

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- (C) 4. 當高度增加時，為產生相同升力，飛機必須飛行在
(A)相同真空速，而與攻角無關 (B)較低的真空速及較大的攻角 (C)任何已知的攻角下較高的真空速

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- (C) 5. 於穩定狀態下降中的飛機，下列有關的作用力何者為真？
(A)上升力的總合小於下降力的總合 (B)向後力的總合大於向前力的總合 (C)向前力的總合等於向後力的總合

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- (C) 6. 由平直飛行轉換至爬升過程中，攻角增加而升力
(A)暫時減少 (B)維持不變 (C)暫時增加

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- (B) 7. 於穩定定速飛行時，下列有關升力何者為真？
(A)低速時攻角減小，以產生足夠的升力來保持高度 (B)對每個攻角而言，皆有一對應的指示空速，以產生足夠的升力來保持高度 (C)一翼切形會在相同的指示空速下失速；因此，當重量增加時需加速，以產生足夠的升力來保持高度

原始題號:0012636 題組:0 難易度:中

- (C) 8. 於平飛轉彎時加速，必須採取什麼動作以保持高度？攻角
(A)及坡度必須減小 (B)必須增加或坡度減小 (C)必須減小或坡度增加

原始題號:0012637 題組:0 難易度:中

- (A) 9. 於平飛轉彎保持固定坡度，如轉彎率改變則負荷因數
(A)保持恆定，與空氣密度及合力的升力向量無關 (B)因為合力的升力向量是成比例的變化，將隨著速度及空氣密度而改變 (C)隨著合力的升力向量而改變

原始題號:0012638 題組:0 難易度:中

- (C) 10. 在增加轉彎率的同時減小轉彎半徑，則駕駛員應
(A)保持坡度並減速 (B)增加坡度並加速 (C)增加坡度並減速

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- (A) 11. 飛機在同高度作協調轉彎時，關於轉彎率及轉彎半徑何者為真？
(A)對特定的坡度及空速而言，其轉彎率及轉彎半徑不變 (B)為保持穩定的轉彎率，當空速減小時必須增加坡度 (C)真空速愈大，轉彎率及轉彎半徑也愈大，而與坡度無關

原始題號:0012640 題組:0 難易度:中

- (B) 12. 協調轉彎時，保持固定坡度及高度，當空速增加，則
(A)轉彎率減小，導致負荷因數減小 (B)轉彎率減小，負荷因數不變 (C)轉彎率增加，負荷因數不變

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- (A) 13. 飛機在一已知坡度下作等高度協調轉彎，所承受之負荷因數
(A)為恆定且失速速度提高 (B)隨轉彎率而改變 (C)為恆定且失速速度降低

原始題號:0012642 題組:0 難易度:中

- (B) 14. 為何應避免飛行速度大於VNE？
(A)過度的誘導阻力會導致結構故障 (B)如遭遇陣風，可能超過設計的負荷因數極限 (C)因操控效率嚴重損失，造成飛機失控

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- (A) 15. (參考Fig1) 點 E至點 F之垂直線段，在空速表上是以下列何項顯示？(如圖A31_Fig1)
(A)黃色弧形的上限 (B)綠色弧形的上限 (C)藍色幅射狀線條

題目圖：

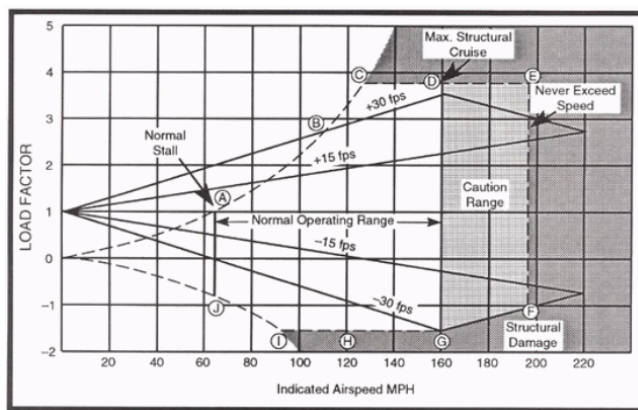


FIGURE 5.—Velocity vs. G-Loads.

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- (A) 16. 如飛機陀螺儀已具備真空系統裝置，則電針球儀的優點是？
(A)作為真空系統失效時的備用裝置 (B)比真空驅動轉彎指示儀可靠 (C)不會產生如真空驅動轉彎指示儀般的翻滾

原始題號:0012645 題組:0 難易度:中

- (A) 17. 為避開剛落地的大型噴射機可能之機尾擾流，起飛前應計劃於跑道何處離地？
(A)通過噴射機的著陸點 (B)於噴射機著陸點或該點之前 (C)於噴射機著陸點前約 500 ft

原始題號:0012646 題組:0 難易度:中

- (B) 18. 關於機尾擾流，何者敘述正確？
(A)渦流產生開始於起飛滾行初期 (B)主要危險是因為誘導滾轉而引起的失控 (C)最大的渦流強度來自於重型，外形全收及高速航機

原始題號:0012647 題組:0 難易度:中

- (A) 19. 如必須於雪泥道面上起飛，如何使起落架結構冰凍情況減至最低？
(A)重覆收/放起落架 (B)延遲收起落架 (C)先加速至VLE再收起落架

原始題號:0012648 題組:0 難易度:中

- (B) 20. 當遭遇強烈亂流時，駕駛員應減速至
(A)最低操作速度 (B)設計操作速度 (VA) (C)最大結構巡航速度 (VNO)

原始題號:0012649 題組:0 難易度:中

- (C) 21. 飛行於強烈亂流中時，使翼負荷因數減至最小的最佳操作技術為？
(A)視需要調整油門位置，以保持定速 (B)使用油門控制速度，保持機翼水平，容許高度變化 (C)使用油門及配平控制速度等於或低於操作速度 (VA)，保持機翼水平，並容許空速及高度變化

原始題號:0012650 題組:0 難易度:中

- (B) 22. 於特定外形下，其失速速度或最低穩定飛行速度的正確符號是
(A)VS (B)VS1 (C)VS1

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- (C) 23. 下列何者為主要飛操系？
(A)調整片 (B)襟翼 (C)外側副翼

原始題號:0012652 題組:0 難易度:易

- (C) 24. 下列何者為次要飛操系？
(A)方向/升降舵 (B)上方向舵 (C)前緣襟翼

原始題號:0012653 題組:0 難易度:易

- (C) 25. 內側副翼通常用於？
(A)低速飛行 (B)高速飛行 (C)低速及高速飛行

原始題號:0012654 題組:0 難易度:易

- (A) 26. 外側副翼通常用於？
(A)低速飛行 (B)高速飛行 (C)低速及高速飛行

原始題號:0012655 題組:0 難易度:易

- (B) 27. 打動伺服調整片後，主要控制翼面會朝那個方向移動？
(A)同方向 (B)反方向 (C)對所有位置皆保持固定

原始題號:0012656 題組:0 難易度:易

- (B) 28. 高升力裝置的主要目的是增加
(A)最大升/阻比 (B)低速時的升力 (C)阻力及減速

原始題號:0012657 題組:0 難易度:易

- (A) 29. 翼前緣襟翼的目的是？
(A)增加翼曲面彎度 (B)減升力而不加速 (C)高攻角時，導引氣流通過翼上緣

原始題號:0012658 題組:0 難易度:易

- (A) 30. 著陸前的仰轉階段中，落地外形之翼前緣襟翼主要功能是？
(A)防止氣流分離 (B)減低下降率 (C)增加翼形阻力

原始題號:0012659 題組:0 難易度:易

(C) 31. 如攻角及其它因素保持恆定而速度加倍, 則空速與升力之比值為 ? 升力
(A)相同 (B)增加為2倍 (C)增加為4倍

原始題號:0012660 題組:0 難易度:易

(B) 32. 飛機於地面效應中, 如何產生與無地面效應相同的升力 ?
(A)相同攻角 (B)較低的攻角 (C)較高的攻角

原始題號:0012661 題組:0 難易度:易

(A) 33. 平飛時, 如空速低於最大升/阻比速度, 則對飛機總阻力的效應是 ?
(A)增加, 因誘導阻力增加 (B)增加, 因寄生阻力增加 (C)減少, 因誘導阻力較小

原始題號:0012662 題組:0 難易度:易

(A) 34. 當飛機脫離地面效應時, 預期會有何狀況產生 ?
(A)誘導阻力增加, 需要較高的攻角 (B)寄生阻力減少, 容許較低的攻角 (C)增加動態安定性

原始題號:0012663 題組:0 難易度:易

(A) 35. 安裝於機翼上的渦流產生器的目的是 ?
(A)減少超音速氣流通過翼面時所產生的阻力 (B)增加阻力及高速時具有輔助副翼效果
(C)使翼面上的空氣分流, 因此失速由翼根向翼尖延伸

原始題號:0012664 題組:0 難易度:易

(A) 36. 亂流如何造成失速速度增加 ?
(A)相對風突然改變 (B)攻角降低 (C)負荷因數突然減小

原始題號:0012665 題組:0 難易度:易

(C) 37. 何謂負荷因數 ?
(A)升力乘以總重 (B)升力減總重 (C)升力除以總重

原始題號:0012666 題組:0 難易度:易

(B) 38. 於穩定氣流中作協調轉彎時, 機翼負荷與何因素有關 ?
(A)轉彎率 (B)坡度 (C)真空速

原始題號:0012667 題組:0 難易度:易

(B) 39. 在何種速度下, 增加上仰姿態會促使飛機爬升 ?
(A)低速 (B)高速 (C)任何速度

原始題號:0012668 題組:0 難易度:易

(C) 40. 當坡度增加而駕駛員未採取改正動作時, 則升力之垂直分量及下沉率會有何影響 ?
(A)升力增加且下沉率增加 (B)升力減少且下沉率減少 (C)升力減少且下沉率增加

原始題號:0012669 題組:0 難易度:易

(A) 41. 以固定坡度加速, 轉彎率與轉彎半徑之間的關係為何 ?
(A)轉彎率減少且轉彎半徑增加 (B)轉彎率增加且轉彎半徑減少 (C)轉彎率及轉彎半徑增加

原始題號:0012670 題組:0 難易度:易

(B) 42. 駕駛員如何能在增加轉彎率的同時又減少轉彎半徑 ?
(A)增加坡度及空速 (B)增加坡度及減速 (C)減少坡度及加速

原始題號:0012671 題組:0 難易度:易

(A) 43. 保持高度轉彎時，為何必須增加攻角？

(A)補償升力垂直分量的損失 (B)增加升力的水平分量等於其垂直分量 (C)補償阻力增加

原始題號:0012672 題組:0 難易度:易

(A) 44. 於落地滾行階段，何種情況可使主輪煞車達到最大效益？

(A)翼面升力減少 (B)高的地速 (C)輪子鎖死且側滑

原始題號:0012673 題組:0 難易度:易

(C) 45. 何種情況會縮短起飛所需跑道長度？

(A)高於建議的空速仰轉 (B)低於標準大氣密度 (C)增加頂風分量

原始題號:0012674 題組:0 難易度:易

(C) 46. 當遭遇順風時，駕駛員應如何操作以保持最大航程之飛機性能？

(A)加速 (B)保持速度 (C)減速

原始題號:0012675 題組:0 難易度:易

(B) 47. 當飛機重量減輕時，渦輪噴射飛機的最大航程性能是藉由那項程序獲得？

(A)加速或爬高 (B)爬高或減速 (C)加速或下降高度

原始題號:0012676 題組:0 難易度:易

(C) 48. 就一輕型雙發動機的飛機而言，最安全且最有效之起飛及初期爬升程序為？

(A)於地面上時，以發動機失效之最佳爬升率速度離地及爬升 (B)以臨界發動機失效之最低操作速度(VMC)離地，並以最大爬升角速度爬升 (C)以略高於臨界發動機失效之最低操作速度(VMC)離地，並以最大爬升率速度爬升

原始題號:0012677 題組:0 難易度:易

(A) 49. 外界溫度高，對渦輪發動機輸出推力影響為何？

(A)由於空氣密度減小，故推力下降 (B)維持相同推力，但渦輪溫度升高 (C)因為吸取高溫空氣之熱能，故推力較大

原始題號:0012678 題組:0 難易度:易

(C) 50. 當外界壓力降低時，輸出推力

(A)增加，因噴射機於稀薄空氣中效率較佳 (B)維持不變，因受壓縮之進氣道空氣將補償降低的大氣壓力 (C)降低，因高密度高度之故

原始題號:0012679 題組:0 難易度:易

(B) 51. 使用渦輪噴射或渦輪螺旋槳發動機之最重要的限制為

(A)限制壓縮器轉速 (B)限制排氣溫度 (C)限制扭力

原始題號:0012680 題組:0 難易度:易

(A) 52. 次音速飛行之馬赫數範圍發生於？

(A)低於.75馬赫 (B)介於.75至1.2馬赫之間 (C)介於1.2至2.5馬赫之間

原始題號:0012681 題組:0 難易度:易

(B) 53. 穿音速飛行區之馬赫數範圍是介於

(A).5至.75馬赫之間 (B)介於.75至1.2馬赫之間 (C)介於1.2至2.5馬赫之間

原始題號:0012682 題組:0 難易度:易

(B) 54. 後掠翼設計之缺點是？

(A)翼根比翼尖先失速 (B)翼尖比翼根先失速 (C)壓力中心前移時，造成嚴重之下俯力距

原始題號:0012683 題組:0 難易度:易

(B) 55. 當飛機著陸於光滑且潮濕的跑道上時，黏性水漂與動力水漂之速度比為？

(A)約為動力水漂速度的 2 倍 (B)比動力水漂速度低 (C)與動力水漂速度相同

原始題號:0012684 題組:0 難易度:易

(C) 56. 落地時如高於建議之著陸速度，對水漂現象有何影響？

(A)對水漂無影響，但增加落地滾行距離 (B)如使用較大煞車可降低水漂可能性 (C)增加水漂可能性而與煞車無關

原始題號:0012685 題組:0 難易度:易

(C) 57. 冰，雪或霜的形成，對飛機有何影響？

(A)降低失速速度 (B)減少上仰傾向 (C)降低失速攻角

原始題號:0012686 題組:0 難易度:易

(C) 58. 當頂風轉為靜風時，駕駛員應瞭解駕駛艙內會有那些初期指示？

(A)指示空速下降，飛機上仰，且高度下降 (B)指示空速增加，飛機下俯，且高度上升 (C)指示空速下降，飛機下俯，且高度下降

原始題號:0012687 題組:0 難易度:易

(C) 59. 當恆定順風轉為靜風時，駕駛員應瞭解駕駛艙內會有那些初期指示？

(A)高度上升，俯仰姿態及指示空速降低 (B)高度，俯仰姿態及指示空速降低 (C)高度，俯仰姿態及指示空速增加

原始題號:0012688 題組:0 難易度:易

(A) 60. 起飛階段中遭遇增強之順風風切，會察覺到那些飛機性能特性？

(A)空速性能損失或減少 (B)縮短起飛距離 (C)起飛後立刻增加爬升性能

原始題號:0012689 題組:0 難易度:中

(A) 61. 航機飛行中，機翼上之氣動力與飛機重量之比值，下列敘述者為真？

(A)此比值稱為負荷因數，直接影響失速速度 (B)此比值稱為展弦比，直接影響失速速度 (C)此比值稱為負荷因數，與失速速度無關

原始題號:0012690 題組:0 難易度:中

(A) 62. 飛機在一已知坡度下作等高度協調轉彎，所承受之負荷因數

(A)為恆定，但失速速度較未轉彎時為高 (B)隨轉彎率而改變 (C)為恆定，但失速速度較未轉彎時為低

原始題號:0012691 題組:0 難易度:中

(A) 63. 飛機俯衝時所作之迅速改正，其負荷因數效應會使失速速度

(A)提高 (B)降低 (C)不變

原始題號:0012692 題組:0 難易度:中

(B) 64. 協調轉彎時，保持固定坡度及高度，當空速增加，則

(A)轉彎率減小，導致負荷因數減小 (B)轉彎率減小，負荷因數不變 (C)轉彎率增加，負荷因數不變

原始題號:0012693 題組:0 難易度:中

- (A) 65. 有關機翼上之升力，最合適的定義為
(A)與相對風垂直之作用力 (B)與翼弦垂直之壓力分量 (C)機翼上半部表面層流對機翼所產生的壓力，其與翼弦垂直之壓力分量

原始題號:0012694 題組:0 難易度:中

- (A) 66. 於平飛轉彎保持固定坡度，如轉彎率改變則負荷因數
(A)保持恆定，與空氣密度及合力的升力向量無關 (B)會隨著速度及空氣密度而改變
(C)隨著合力的升力向量而改變

原始題號:0012695 題組:0 難易度:中

- (C) 67. 飛機以60度坡度轉彎，空速從90哩加速至135哩負荷因數會
(A)負荷因數增加，失速速度增加 (B)負荷因數減少，失速速度增加 (C)負荷因數一樣但轉彎半徑增加

原始題號:0012696 題組:1 難易度:中 (R20130125)

- (A) 68. (參考Fig2) 關於失速速度之敘述，下列何者為真(如圖A31_Fig2)
(A)有動力及於60° 坡度轉彎的狀況下，飛機起落架及襟翼收起時之失速速度較起落架及襟翼放下時之失速速度高10哩 (B)無動力的狀況下，於60° 坡度轉彎、襟翼及起落架收起時之失速速度會較平飛、襟翼及起落架放下時之失速速度低35哩 (C)有動力的狀況下，45° 坡度轉彎之失速速度較平飛時失速速度高10哩

題目圖：

GROSS WEIGHT 2750 LBS		ANGLE OF BANK			
		LEVEL	30°	45°	60°
POWER		GEAR AND FLAPS UP			
ON	MPH KTS	62 54	67 58	74 64	88 76
OFF	MPH KTS	75 65	81 70	89 77	106 92
		GEAR AND FLAPS DOWN			
ON	MPH KTS	54 47	58 50	64 56	76 66
OFF	MPH KTS	66 57	71 62	78 68	93 81

原始題號:0012697 題組:0 難易度:中

- (A) 69. 飛機在同高度作協調轉彎時，關於轉彎率及轉彎半徑何者為真？
(A)對特定的坡度及空速而言，其轉彎率及轉彎半徑不變 (B)為保持穩定的轉彎率，當空速減小時必須增加坡度 (C)真空速愈大，轉彎率及轉彎半徑也愈大，而與坡度無關

原始題號:0012698 題組:0 難易度:中

- (B) 70. 為保持高度轉彎而提高攻角是補償何者減少
(A)拉力相反方向的力 (B)垂直方向的昇力 (C)水平方向的昇力

原始題號:0012699 題組:0 難易度:中

- (C) 71. 機翼在設計上會產生升力是由於
(A)機翼的下方之負壓與機翼的上方之真空所產生的壓力差 (B)機翼的下方的真空與機翼上方之正壓所產生的壓力差 (C)機翼下方的高壓和機翼上方的低壓所產生的壓力差造成的

原始題號:0012700 題組:0 難易度:中

- (C) 72. 於平飛轉彎時加速，必須採取什麼動作以保持高度？攻角
(A)及坡度必須減小 (B)必須增加或坡度減小 (C)必須減小或坡度增加

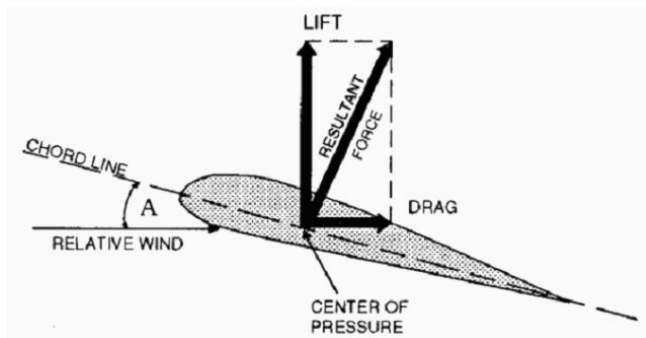
原始題號:0012701 題組:0 難易度:中

- (A) 73. 當飛機處於穩定狀況，指的是？
(A)不需費力控制 (B)不易失速 (C)不會進入螺旋

原始題號:0012702 題組:1 難易度:中 (R20130125)

- (A) 74. (參考Fig4)銳角A是什麼名稱？(如圖A31_Fig4)
(A)攻角 (B)傾角 (C)上反角

題目圖：



原始題號:0012703 題組:0 難易度:中

- (A) 75. 下列何者會決定飛機之縱向穩定度？
(A)升力中心與重心的相互關係位置 (B)水平安定面、方向舵與方向舵調整片的作用影響 (C)升力、重力、推力與阻力彼此相互關係

原始題號:0012704 題組:0 難易度:中

- (C) 76. 當進場落地時，因地面效應而發生平飄現象，大部分是什麼原因？
(A)距離地面高度約兩倍翼展之長 (B)較正常攻角為高時 (C)距離地面高度小於一倍翼展之長

原始題號:0012705 題組:0 難易度:中

- (C) 77. 由於什麼造成超過總負載而衝擊機翼
(A)重心的位置 (B)負載突然的改變 (C)飛機的速度

原始題號:0012706 題組:0 難易度:中

- (C) 78. 大型飛機所產生的翼尖渦流傾向於
(A)上揚影響航機路線 (B)上揚影響起飛或落地航機穿越跑道路線 (C)產生下沉、低於航機的亂流

原始題號:0012707 題組:0 難易度:中

- (B) 79. 在什麼飛行狀況下，飛機會進入螺旋？
(A)當一邊機翼較低偏向失速時 (B)失速 (C)陡峭地向下作螺旋形下降

原始題號:0012708 題組:0 難易度:中

(C) 80. 攻角的定義？

(A)形成於飛機縱軸與翼弦之間 (B)介於飛機爬升角與地平線 (C)介於翼弦與相對風之角度

原始題號:0012709 題組:0 難易度:中

(A) 81. 因地面效應而產生什麼問題？

(A)在起飛速度到達之前，飛機開始離地 (B)當落地接近地面時，突發性不穩定 (C)即使速度足夠達到正常起飛需求，仍無能力起飛

原始題號:0012710 題組:0 難易度:中

(C) 82. 當動力減少而未調整升降舵配平時，會造成機頭下沉，其所造成原因為何？

(A)當推力與阻力減少時，重心往前移動 (B)當推力減少到低於重力，升力也一併減少時，機翼不足以支撐重量 (C)螺旋槳所產生的氣流下洗到升降舵減少時，造成升降舵效力減少

原始題號:0012711 題組:0 難易度:中

(A) 83. 當飛機向左進入螺旋時，哪一邊機翼處於失速狀況？

(A)左右皆失速 (B)左翼失速 (C)右翼失速

原始題號:0012712 題組:0 難易度:中

(B) 84. 在重型航空器之後，起飛或落地必需顧及機尾渦流的危險性，其所考量亂流會造成

(A)轉彎率減小，導致負荷因數減小 (B)上升，自穿越跑道進入起飛或落地路徑 (C)轉彎率增加，負荷因數不變

原始題號:0012713 題組:0 難易度:中 (R20210902)

(A) 85. 相較於直線平飛，哪一項飛行操作會造成負載因素增加？

(A)轉彎 (B)爬升 (C)失速

原始題號:0012714 題組:0 難易度:中

(C) 86. 高度增加時，根據指示空速飛機失速的速度會

(A)減少當真空速減少時 (B)減少當真空速增加時 (C)不變，與高度無關

原始題號:0012715 題組:0 難易度:中

(B) 87. 起飛時，機翼上的霜會如何影響飛機性能？

(A)霜會改變機翼上的弧度，增加升力 (B)霜會干擾機翼上的平順氣流，影響飛機升力性能 (C)霜會增加飛機攻角，減少失速速度

原始題號:0012716 題組:0 難易度:中

(A) 88. 在什麼飛行狀況單引擎飛機扭力效應最大？

(A)低速，大馬力，高攻角 (B)低速，小馬力，低攻角 (C)高速，大馬力，高攻角

原始題號:0012717 題組:0 難易度:中

(A) 89. 高升力裝置其主要是增加

(A)升力，在低速時 (B)升阻力比 (C)阻力及減低速

原始題號:0012718 題組:0 難易度:中

(A) 90. 在空中，阻力板的目的？

(A)減少升力而不需增加空速 (B)增加機翼上的弧度 (C)在高攻角時，導引氣流通過機翼上方

原始題號:0012719 題組:0 難易度:中

(A) 91. 在地面，阻力板的目的是？

(A)落地時減少機翼升力 (B)轉彎時，輔助飛機滾轉 (C)增加下降率，在不增加空速

原始題號:0012720 題組:0 難易度:中

(B) 92. 亂流如何影響、造成失速速度增加？

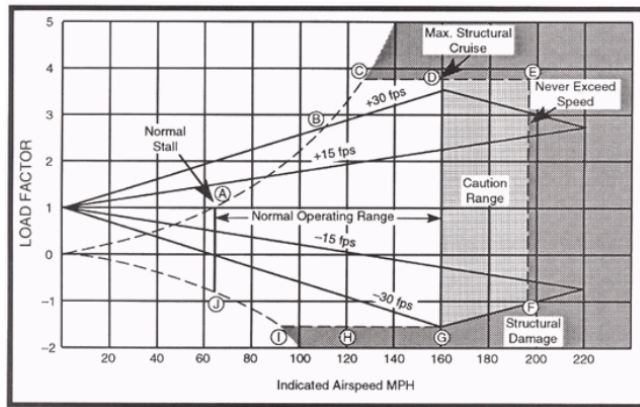
(A)減低攻角 (B)突然地影響相對風 (C)快速地減少負載因素

原始題號:0012721 題組:1 難易度:中 (R20130125)

(B) 93. (參考Fig1) 從C點到E點的水平虛線代表(如圖A31_Fig1)

(A)無限的負荷係數 (B)負荷係數的上限 (C)正常操作之空速範圍

題目圖：



原始題號:0012722 題組:0 難易度:中

(B) 94. 將升降舵控制桿往前扳了之後釋放，如果飛機的姿態有回覆原點的傾向，則此飛機具有

(A)正向的動態穩定度 (B)正向的靜態穩定度 (C)中性的動態穩定度

原始題號:0012723 題組:0 難易度:中

(A) 95. 任何飛機若維持一固定的傾角，則作用在一諧調及等高度轉彎的負荷係數

(A)為一固定值且其失速速度會隨傾角之增加而增加 (B)會隨著轉彎率變化 (C)為一固定值且其失速速度會隨傾角之增加而減少

原始題號:0012724 題組:0 難易度:中

(C) 96. (參考圖2) 有關失速速度，下列敘述何者為真？

(A)如果起落架和襟翼都是放下的狀況，無動力的飛機會有較高之失速速度 (B)在60度傾角時，起落架收起時會有較低的失速速度 (C)有動力的狀況下，小傾角的飛機具有較低之失速速度

原始題號:0012725 題組:0 難易度:中

(B) 97. 兩滑翔機之機翼參數如下

A滑翔機

翼展 = 48呎

平均翼弦長 = 4.5 呎

B滑翔機

翼展 = 54呎

平均翼弦長 = 3.7呎

請計算兩滑翔機之展弦比，且比較兩滑翔機在低速飛行時的性能

(A)A滑翔機之展弦比為10.6，較B滑翔機會產生較大之昇力及較小之阻力 (B)B滑翔機之展弦比為14.5，較A滑翔機會產生較大之昇力及較小之阻力 (C)B滑翔機之展弦比為10.6，較A滑翔機會產生較小之昇力及較大之阻力

(A31) MPL飛機飛航原理

最近更新日期：110/09/03 ~ 110/09/03；更新題號：0012713

原始題號:0012629 題組:0 難易度:中

- (A) 1.The angle of attack at which a wing stalls remains constant regardless of
(A)weight, dynamic pressure, bank angle, or pitch attitude (B)dynamic pressure, but varies with weight, bank angle, and pitch attitude (C)weight and pitch attitude, but varies with dynamic pressure and bank angle

原始題號:0012630 題組:0 難易度:中

- (A) 2.Stall speed is affected by
(A)weight, load factor, and power (B)load factor, angle of attack, and power (C)angle of attack, weight, and air density

原始題號:0012631 題組:0 難易度:中

- (A) 3.An airplane will stall at the same
(A)angle of attack regardless of the attitude with relation to the horizon (B)airspeed regardless of the attitude with relation to the horizon (C)angle of attack and attitude with relation to the horizon

原始題號:0012632 題組:0 難易度:中

- (C) 4.To generate the same amount of lift as altitude is increased, an airplane must be flown at
(A)the same true airspeed regardless of angle of attack (B)a lower true airspeed and a greater angle of attack (C)a higher true airspeed for any given angle of attack

原始題號:0012633 題組:0 難易度:中

- (C) 5.Which is true regarding the forces acting on an aircraft in a steady-state descent ? The sum of all
(A)upward forces is less than the sum of all downward forces (B)rearward forces is greater than the sum of all forward forces (C)forward forces is equal to the sum of all rearward forces

原始題號:0012634 題組:0 難易度:中

- (C) 6.During the transition from straight-and-level flight to a climb, the angle of attack is increased and lift
(A)is momentarily decreased (B)remains the same (C)is momentarily increased

原始題號:0012635 題組:0 難易度:中

- (B) 7. Which is true regarding the force of lift in steady, unaccelerated flight ?
(A) at lower airspeeds the angle of attack must be less to generate sufficient lift to maintain altitude (B) there is a corresponding indicated airspeed required to every angle of attack to generate sufficient lift to maintain altitude (C) an airfoil will always stall at the same indicated airspeed; therefore, an increase in weight will require an increase in speed to generate sufficient lift to maintain altitude

原始題號:0012636 題組:0 難易度:中

- (C) 8. If airspeed is increased during a level turn, what action would be necessary to maintain altitude ? The angle of attack
(A) and angle of bank must be decreased (B) must be increased or angle of bank decreased (C) must be decreased or angle of bank increased

原始題號:0012637 題組:0 難易度:中

- (A) 9. While holding the angle of bank constant in a level turn, if the rate of turn is varied the load factor would
(A) remain constant regardless of air density and the resultant lift vector (B) very depending upon speed and air density provided the resultant lift vector varies proportionately (C) vary depending upon the resultant lift vector

原始題號:0012638 題組:0 難易度:中

- (C) 10. To increase the rate of turn and at the same time decrease the radius, a pilot should
(A) maintain the bank and decrease airspeed (B) increase the bank and increase airspeed (C) increase the bank and decrease airspeed

原始題號:0012639 題組:0 難易度:中

- (A) 11. Which is correct with respect to rate and radius of turn for an airplane flown in a coordinated turn at a constant altitude ?
(A) for a specific angle of bank and airspeed, the rate and radius of turn will not vary (B) to maintain a steady rate of turn, the angle of bank must be increased as the airspeed is decreased (C) the faster the true airspeed, the faster the rate and larger the radius of turn regardless of the angle of bank

原始題號:0012640 題組:0 難易度:中

- (B) 12. While maintaining a constant angle of bank and altitude in a coordinated turn, an increase in airspeed will
(A) decrease the rate of turn resulting in a decreased load factor (B) decrease the rate of turn resulting in no change in load factor (C) increase the rate of turn resulting in no change in load factor

原始題號:0012641 題組:0 難易度:中

- (A) 13. For a given angle of bank, in any airplane, the load factor imposed in a coordinated constant-altitude turn
(A) is constant and the stall speed increases (B) varies with the rate of turn
(C) is constant and the stall speed decreases

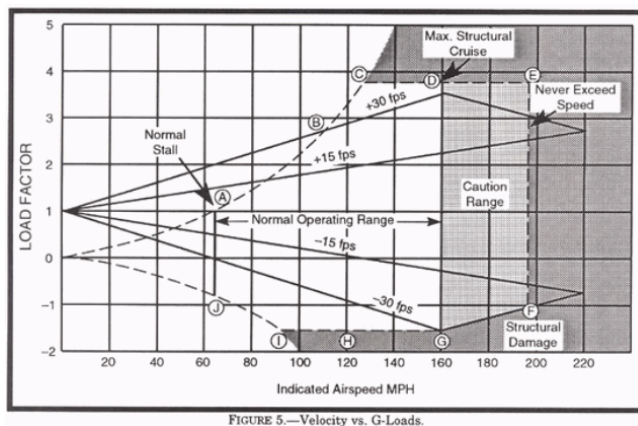
原始題號:0012642 題組:0 難易度:中

- (B) 14. Why should flight speeds above VNE be avoided ?
(A) excessive induced drag will result in structural failure (B) design limit load factors may be exceeded, if gusts are encountered (C) control effectiveness is so impaired that the aircraft becomes uncontrollable

原始題號:0012643 題組:1 難易度:中 (R20130125)

- (A) 15. (Refer to figure 1) The vertical line from point E to F is represented on the airspeed indicator by the (如圖A31_Fig1)
(A) upper limit of the yellow arc (B) upper limit of the green arc (C) blue radial line

題目圖：



原始題號:0012644 題組:0 難易度:中

- (A) 16. What is an advantage of an electric turn coordinator if the airplane has a vacuum system for other gyroscopic instruments ?
(A) it is a backup in case of vacuum system failure (B) it is more reliable than the vacuum-driven indicators (C) it will not tumble as will vacuum-driven turn indicators

原始題號:0012645 題組:0 難易度:中

- (A) 17. To avoid possible wake turbulence from a large jet aircraft that has just landed prior to your takeoff, at which point on the runway should you plan to become airborne ?
(A) past the point where the jet touched down (B) at the point where the jet touched down, or just prior to this point (C) approximately 500 ft prior to the point where the jet touched down

原始題號:0012646 題組:0 難易度:中

- (B) 18. Choose the correct statement regarding wake turbulence
(A) vortex generation begins with the initiation of the takeoff roll (B) the primary hazard is loss of control because of induced roll (C) the greatest vortex strength is produced when the generating airplane is heavy, clean, and fast

原始題號:0012647 題組:0 難易度:中

- (A) 19. If necessary to takeoff from a slushy runway, the freezing of landing gear mechanisms can be minimized by ?
(A)recycling the gear (B)delaying gear retraction (C)increasing the airspeed to VLE before retraction

原始題號:0012648 題組:0 難易度:中

- (B) 20. if severe turbulence is encountered during flight, the pilot should reduce the airspeed to
(A)minimum control speed (B)design-maneuvering speed (VA) (C)max structural cruising speed (VNO)

原始題號:0012649 題組:0 難易度:中

- (C) 21. Which is the best technique for minimizing the wing-load factor when flying in severe turbulence ?
(A)change power settings, as necessary, to maintain constant airspeed
(B)control airspeed with power, maintain wings level, and accept variations of altitude (C)set power and trim to obtain an airspeed at or below maneuvering speed, maintain wings level, and accept variations of airspeed and altitude

原始題號:0012650 題組:0 難易度:中

- (B) 22. Which is the correct symbol for the stalling speed or the minimum steady flight speed in a specified configuration ?
(A)VS (B)VS1 (C)VS1

原始題號:0012651 題組:0 難易度:易

- (C) 23. Which of the following are considered primary flight controls ?
(A)tabs (B)flaps (C)outboard ailerons

原始題號:0012652 題組:0 難易度:易

- (C) 24. Which of the following is considered an auxiliary flight control ?
(A)ruddervator (B)upper rudder (C)leading edge flaps

原始題號:0012653 題組:0 難易度:易

- (C) 25. When are inboard ailerons normally used ?
(A)low-speed flight only (B)high-speed flight only (C)low-speed and high-speed flight

原始題號:0012654 題組:0 難易度:易

- (A) 26. When are outboard ailerons normally used ?
(A)low-speed flight only (B)high-speed flight only (C)low-speed and high-speed flight

原始題號:0012655 題組:0 難易度:易

- (B) 27. Which direction from the primary control surface does a servo tab move ?
(A)same direction (B)opposite direction (C)remains fixed for all positions

原始題號:0012656 題組:0 難易度:易

- (B) 28. The primary purpose of high-lift devices is to increase the
(A) L/D max (B) lift at low speeds (C) drag and reduce airspeed

原始題號:0012657 題組:0 難易度:易

- (A) 29. Which is a purpose of leading-edge flaps ?
(A) increase the camber of the wing (B) reduce lift without increasing airspeed
(C) direct airflow over the top of wing at high angles of attack

原始題號:0012658 題組:0 難易度:易

- (A) 30. What is the primary function of the leading-edge flaps in landing configuration during the flare before touchdown ?
(A) prevent flow separation (B) decrease rate of sink (C) increase profile drag

原始題號:0012659 題組:0 難易度:易

- (C) 31. What will be the ratio between airspeed and lift if the angle of attack and other factors remain constant and airspeed is doubled ? Lift will be
(A) the same (B) two times greater (C) four times greater

原始題號:0012660 題組:0 難易度:易

- (B) 32. How can an airplane produce the same lift in ground effect as when out of ground effect ?
(A) the same angle of attack (B) a lower angle of attack (C) a higher angle of attack

原始題號:0012661 題組:0 難易度:易

- (A) 33. What is the effect on total drag of an aircraft if the airspeed decreases in level flight below that speed for max L/D ?
(A) drag increases because of increased induced drag (B) drag increases because of increased parasite drag (C) drag decreases because of lower induced drag

原始題號:0012662 題組:0 難易度:易

- (A) 34. What flight condition should be expected when an aircraft leaving ground effect ?
(A) an increase in induced drag requiring a higher angle of attack (B) a decrease in parasite drag permitting a lower angle of attack (C) an increase in dynamic stability

原始題號:0012663 題組:0 難易度:易

- (A) 35. Which is a purpose of wing-mounted vortex generators ?
(A) reduce the drag caused by supersonic flow over portions of the wing
(B) increase the onset of drag divergence and aid in aileron effectiveness at high speed (C) break the airflow over the wing so the stall will progress from the root out to the tip of the wing

原始題號:0012664 題組:0 難易度:易

- (A) 36. How can turbulence air cause an increase in stalling speed of an airfoil ?
(A)an abrupt change in relative wind (B)a decrease in angle of attack (C)sudden decrease in load factor

原始題號:0012665 題組:0 難易度:易

- (C) 37. What is load factor ?
(A)lift multiplied by the total weight (B)lift subtracted from the total weight
(C)lift divided by the total weight

原始題號:0012666 題組:0 難易度:易

- (B) 38. Upon which factor does wing loading during a coordinated turn in smooth air depend ?
(A)rate of turn (B)angle of bank (C>true airspeed

原始題號:0012667 題組:0 難易度:易

- (B) 39. At which speed will increasing the pitch attitude cause an airplane to climb ?
(A)low speed (B)high speed (C)any speed

原始題號:0012668 題組:0 難易度:易

- (C) 40. If no corrective action is taken by the pilot as angle of bank is increased, how is the vertical component of lift and sink rate affected ?
(A)lift increases and the sink rate increases (B)lift decreases and the sink rate decreases (C)lift decreases and the sink rate increases

原始題號:0012669 題組:0 難易度:易

- (A) 41. What is the relationship of the rate of turn with the radius of turn with a constant angle of bank but increasing airspeed ?
(A)rate will decrease and radius will increase (B)rate will increase and radius will decrease (C)rate and radius will increase

原始題號:0012670 題組:0 難易度:易

- (B) 42. How can the pilot increase the rate of turn and decrease the radius at the same time ?
(A)steepen the bank and increase airspeed (B)steepen the bank and decrease airspeed (C)shallow the bank and increase airspeed

原始題號:0012671 題組:0 難易度:易

- (A) 43. Why must the angle of attack be increased during a turn to maintain altitude ?
(A)compensate for loss of vertical component of lift (B)increase the horizontal component of lift equal to the vertical component (C)compensate for increase in drag

原始題號:0012672 題組:0 難易度:易

- (A) 44. Under which condition during the landing roll are the main wheel brakes at maximum effectiveness ?
(A) when wing lift has been reduced (B) at high groundspeeds (C) when the wheels are locked and skidding

原始題號:0012673 題組:0 難易度:易

- (C) 45. Which condition reduces the required runway for takeoff ?
(A) higher-than-recommended airspeed before rotation (B) lower-than-standard air density (C) increased headwind component

原始題號:0012674 題組:0 難易度:易

- (C) 46. What should a pilot do to maintain "best range" airplane performance when a tailwind is encountered ?
(A) increase speed (B) maintain speed (C) decrease speed

原始題號:0012675 題組:0 難易度:易

- (B) 47. Max range performance of a turbojet aircraft is obtained by which procedure as aircraft weight decreases ?
(A) increasing speed or altitude (B) increasing altitude or decreasing speed (C) increasing speed or decreasing altitude

原始題號:0012676 題組:0 難易度:易

- (C) 48. What is the safest and most efficient takeoff and initial climb procedure in a light, twin-engine airplane ?
(A) best engine-out, rate-of-climb airspeed while on the ground, then lift off and climb at that speed (B) VMC, then lift off at that speed and climb at max angle of climb speed (C) an airspeed slightly above VMC, then lift off and climb at the best rate-of-climb airspeed

原始題號:0012677 題組:0 難易度:易

- (A) 49. What effect, if any, does high ambient temperature have upon the thrust output of a turbine engine ?
(A) thrust will be reduced due to the decrease in air density (B) thrust will remain the same, but turbine temperature will be higher (C) thrust will be higher because more heat energy is extracted from the hotter air

原始題號:0012678 題組:0 難易度:易

- (C) 50. As outside air pressure decreases, thrust output will
(A) increase due to greater efficiency of jet aircraft in thin air (B) remain the same since compression of inlet air will compensate for any decrease in air pressure (C) decrease due to higher density altitude

原始題號:0012679 題組:0 難易度:易

- (B) 51. The most important restriction to the operation of turbojet or turboprop engines is
(A) limiting compressor speed (B) limiting exhaust gas temperature (C) limiting torque

原始題號:0012680 題組:0 難易度:易

- (A) 52. At what Mach range does the subsonic flight range normally occur ?
(A) below .75 Mach (B) from .75 to 1.2 Mach (C) from 1.2 to 2.5 Mach

原始題號:0012681 題組:0 難易度:易

- (B) 53. Within what Mach range does transonic flight regimes usually occur ?
(A).50 to .75 Mach (B).75 to 1.2 Mach (C)1.2 to 2.5 Mach

原始題號:0012682 題組:0 難易度:易

- (B) 54. What is one disadvantage of a swept-wing design ?
(A) the wing root stalls prior to the wingtip section (B) the wingtip section stalls prior to the wing root (C) severe pitchdown moment when the center of pressure shifts forward

原始題號:0012683 題組:0 難易度:易

- (B) 55. Compared to dynamic hydroplaning, at what speed does viscous hydroplaning occur when landing on a smooth, wet runway ?
(A) at approximately 2 times the speed that dynamic hydroplaning occurs (B) at a lower speed than dynamic hydroplaning (C) at same speed as dynamic hydroplaning

原始題號:0012684 題組:0 難易度:易

- (C) 56. What effect, if any, will landing at a higher-than-recommended touchdown speed have on hydroplaning ?
(A) no effect on hydroplaning, but increases landing roll (B) reduces hydroplaning potential if heavy braking is applied (C) increases hydroplaning potential regardless of braking

原始題號:0012685 題組:0 難易度:易

- (C) 57. What is an effect of ice, snow, or frost formation on an airplane ?
(A) decreased stall speed (B) decreased pitchup tendencies (C) decreased angle of attack for stall

原始題號:0012686 題組:0 難易度:易

- (C) 58. Which initial cockpit indications should a pilot be aware of when a headwind shears to a calm wind ?
(A) indicated airspeed decreases, aircraft pitches up, and altitude decreases
(B) indicated airspeed increases, aircraft pitches down, and altitude increases
(C) indicated airspeed decreases, aircraft pitches down, and altitude decreases

原始題號:0012687 題組:0 難易度:易

- (C) 59. Which initial cockpit indications should a pilot be aware of when a constant tailwind shears to a calm wind ?
(A) altitude increases; pitch and indicated airspeed decrease (B) altitude, pitch and indicated airspeed decrease (C) altitude, pitch, and indicated airspeed increase

原始題號:0012688 題組:0 難易度:易

- (A) 60. Which airplane performance characteristics should be recognized during takeoff when encountering a tailwind shear that increases in intensity ?
(A) loss of, or diminished, airspeed performance (B) decreased takeoff distance
(C) increased climb performance immediately after takeoff

原始題號:0012689 題組:0 難易度:中

- (A) 61. The ratio between the total airload imposed on the wing and the gross weight of an aircraft in flight is known as
(A) load factor and directly affects stall speed. (B) aspect load and directly affects stall speed. (C) load factor and has no relation with stall speed.

原始題號:0012690 題組:0 難易度:中

- (A) 62. For a given angle of bank, in any airplane, the load factor imposed in a coordinated constant-altitude turn
(A) is constant and the stall speed increases. (B) varies with the rate of turn.
(C) is constant and the stall speed decreases.

原始題號:0012691 題組:0 難易度:中

- (A) 63. In a rapid recovery from a dive, the effects of load factor would cause the stall speed to
(A) increase. (B) decrease. (C) not vary.

原始題號:0012692 題組:0 難易度:中

- (B) 64. While maintaining a constant angle of bank and altitude in a coordinated turn, an increase in airspeed will
(A) decrease the rate of turn resulting in a decreased load factor. (B) decrease the rate of turn resulting in no change in load factor. (C) increase the rate of turn resulting in no change in load factor.

原始題號:0012693 題組:0 難易度:中

- (A) 65. Lift on a wing is most properly defined as the
(A) force acting perpendicular to the relative wind. (B) differential pressure acting perpendicular to the chord of the wing. (C) reduced pressure resulting from a laminar flow over the upper camber of an airfoil, which acts perpendicular to the mean camber.

原始題號:0012694 題組:0 難易度:中

- (A) 66. While holding the angle of bank constant, if the rate of turn is varied the load factor would
(A) remain constant regardless of air density and the resultant lift vector.
(B) vary depending upon speed and air density. (C) vary depending upon the resultant lift vector.

原始題號:0012695 題組:0 難易度:中

- (C) 67. If the airspeed is increased from 90 knots to 135 knots during a level 60° banked turn, the load factor will
(A) increase as well as the stall speed. (B) decrease and the stall speed will increase. (C) remain the same but the radius of turn will increase.

原始題號:0012696 題組:1 難易度:中 (R20130125)

- (A) 68.(Refer to Figure 2.) Select the correct statement regarding stall speeds. The airplane will stall(如圖A31_Fig2)
- (A)10 knots higher in a power-on 60° bank with gear and flaps up than with gear and flaps down. (B)35 knots lower in a power-off, flaps-up, 60° bank, than in a power-off, flaps-down, wings-level configuration. (C)10 knots higher in a 45° bank, power-on stall than in a wings-level stall.

題目圖：

GROSS WEIGHT 2750 LBS		ANGLE OF BANK			
		LEVEL	30°	45°	60°
POWER		GEAR AND FLAPS UP			
ON	MPH	62	67	74	88
	KTS	54	58	64	76
OFF	MPH	75	81	89	106
	KTS	65	70	77	92
		GEAR AND FLAPS DOWN			
ON	MPH	54	58	64	76
	KTS	47	50	56	66
OFF	MPH	66	71	78	93
	KTS	57	62	68	81

原始題號:0012697 題組:0 難易度:中

- (A) 69.Which is correct with respect to rate and radius of turn for an airplane flown in a coordinated turn at a constant altitude?
- (A)For a specific angle of bank and airspeed, the rate and radius of turn will not vary. (B)To maintain a steady rate of turn, the angle of bank must be increased as the airspeed is decreased. (C)The faster the true airspeed, the faster the rate and larger the radius of turn regardless of the angle of bank.

原始題號:0012698 題組:0 難易度:中

- (B) 70.To maintain altitude during a turn, the angle of attack must be increased to compensate for the decrease in the
- (A)forces opposing the resultant component of drag. (B)vertical component of lift. (C)horizontal component of lift.

原始題號:0012699 題組:0 難易度:中

- (C) 71. An aircraft wing is designed to produce lift resulting from a difference in the
(A)negative air pressure below and a vacuum above the wing surface. (B)vacuum below the wing surface and greater air pressure above the wing surface. (C)higher air pressure below the wing surface and lower air pressure above the wing surface.

原始題號:0012700 題組:0 難易度:中

- (C) 72. If airspeed is increased during a level turn, what action would be necessary to maintain altitude? The angle of attack
(A)and angle of bank must be decreased. (B)must be increased or angle of bank decreased. (C)must be decreased or angle of bank increased.

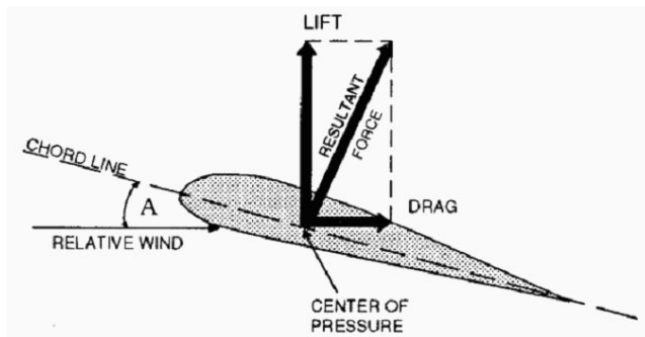
原始題號:0012701 題組:0 難易度:中

- (A) 73. An airplane said to be inherently stable will
(A)require less effort to control (B)be difficult to stall. (C)not spin

原始題號:0012702 題組:1 難易度:中 (R20130125)

- (A) 74. (Refer to Figure 4.) The acute angle A is the angle of (如圖A31_Fig4)
(A)attack (B)incidence (C)dihedral

題目圖：



原始題號:0012703 題組:0 難易度:中

- (A) 75. What determines the longitudinal stability of an airplane?
(A)The location of the CG with respect to the center of lift (B)The effectiveness of the horizontal stabilizer, rudder, and rudder trim tab. (C)The relationship of thrust and lift to weight and drag

原始題號:0012704 題組:0 難易度:中

- (C) 76. Floating caused by the phenomenon of ground effect will be most realized during an approach to land when at
(A)twice the length of the wingspan above the surface. (B)a higher-than-normal angle of attack. (C)less than the length of the wingspan above the surface

原始題號:0012705 題組:0 難易度:中

- (C) 77. The amount of excess load that can be imposed on the wing of an airplane depends upon the
(A)position of the CG. (B)abruptness at which the load is applied. (C)speed of the airplane.

原始題號:0012706 題組:0 難易度:中

- (C) 78. Wingtip vortices created by large aircraft tend to
(A)rise into the traffic pattern. (B)rise into the takeoff or landing path of a crossing runway. (C)sink below the aircraft generating turbulence

原始題號:0012707 題組:0 難易度:中

- (B) 79. In what flight condition must an aircraft be placed in order to spin?
(A)Partially stalled with one wing low. (B)Stalled. (C)In a steep diving spiral.

原始題號:0012708 題組:0 難易度:中

- (C) 80. The term "angle of attack"?is defined as the angle
(A)formed by the longitudinal axis of the airplane and the chord line of the wing. (B)between the airplane's climb angle and the horizon. (C)between the wing chord line and the relative wind.

原始題號:0012709 題組:0 難易度:中

- (A) 81. Ground effect is most likely to result in which problem?
(A)Becoming airborne before reaching recommended takeoff speed. (B)Settling to the surface abruptly during landing. (C)Inability to get airborne even though airspeed is sufficient for normal takeoff needs.

原始題號:0012710 題組:0 難易度:中

- (C) 82. What causes an airplane (except a T-tail) to pitch nosedown when power is reduced and controls are not adjusted?
(A)The CG shifts forward when thrust and drag are reduced (B)When thrust is reduced to less than weight, lift is also reduced and the wings can no longer support the weight. (C)The downwash on the elevators from the propeller slipstream is reduced and elevator effectiveness is reduced.

原始題號:0012711 題組:0 難易度:中

- (A) 83. During a spin to the left, which wing(s) is/are stalled?
(A)Both wings are stalled (B) left wings is stalled (C) right wings is stalled

原始題號:0012712 題組:0 難易度:中

- (B) 84. When taking off or landing at an airport where heavy aircraft are operating, one should be particularly alert to the hazards of wingtip vortices because this turbulence tends to
(A)rise from a crossing runway into the takeoff or landing path (B)sink into the flightpath of aircraft operating below the aircraft generating the turbulence. (C)rise into the traffic pattern area surrounding the airport.

原始題號:0012713 題組:0 難易度:中 (R20210902)

- (A) 85. Which basic flight maneuver increases the load factor on an airplane as compared to straight-and-level flight?
(A) Turns (B) Climbs. (C) Stalls

原始題號:0012714 題組:0 難易度:中

- (C) 86. As altitude increases, the indicated airspeed at which a given airplane stalls in a particular configuration will
(A) decrease as the true airspeed decreases (B) decrease as the true airspeed increase (C) remain the same regardless of altitude.

原始題號:0012715 題組:0 難易度:中

- (B) 87. How will frost on the wings of an airplane affect takeoff performance?
(A) Frost will change the camber of the wing, increasing its lifting capability.
(B) Frost will disrupt the smooth flow of air over the wing, adversely affecting its lifting capability. (C) Frost will cause the airplane to become airborne with a higher angle of attack, decreasing the stall speed.

原始題號:0012716 題組:0 難易度:中

- (A) 88. In what flight condition is torque effect the greatest in a single-engine airplane?
(A) Low airspeed, high power, high angle of attack. (B) Low airspeed, low power, low angle of attack. (C) high airspeed, high power, high angle of attack.

原始題號:0012717 題組:0 難易度:中

- (A) 89. The primary purpose of high-lift devices is to increase the
(A) lift at low speeds. (B) L/D max. (C) drag and reduce airspeed.

原始題號:0012718 題組:0 難易度:中

- (A) 90. What is a purpose of flight spoilers?
(A) Reduce lift without increasing airspeed. (B) Increase the camber of the wing.
(C) Direct airflow over the top of the wing at high angles of attack.

原始題號:0012719 題組:0 難易度:中

- (A) 91. Which is a purpose of ground spoilers?
(A) Reduce the wings' lift upon landing. (B) Aid in rolling an airplane into a turn. (C) Increase the rate of descent without gaining airspeed.

原始題號:0012720 題組:0 難易度:中

- (B) 92. How can turbulent air cause an increase in stalling speed of an airfoil?
(A) A decrease in angle of attack. (B) An abrupt change in relative wind. (C) Sudden decrease in load factor.

原始題號:0012721 題組:1 難易度:中 (R20130125)

- (B) 93. (Refer to Figure 1.) The horizontal dashed line from point C to point E represents the (如圖A31_Fig1)
 (A)ultimate load factor. (B)positive limit load factor. (C)airspeed range for normal operations.

題目圖：

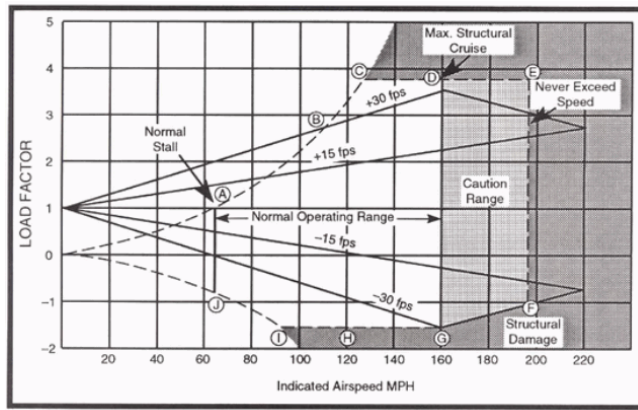


FIGURE 5.—Velocity vs. G-Loads.

原始題號:0012722 題組:0 難易度:中

- (B) 94. If the airplane attitude initially tends to return to its original position after the elevator control is pressed forward and released, the airplane displays
 (A)positive dynamic stability. (B)positive static stability. (C)Neutral dynamic stability.

原始題號:0012723 題組:0 難易度:中

- (A) 95. For a give angle of bank, in any airplane, the load factor imposed in a coordinated constant-altitude turn
 (A)is constant and the stall speed increases. (B)varies with the rate of turn.
 (C)is constant and the stall speed decreases.

原始題號:0012724 題組:0 難易度:中

- (C) 96. (Refer to Figure 2.) Select the correct statement regarding stall speeds.
 (A)Power-off stalls occur at higher airspeeds with the gear and flaps down. (B)In a 60° bank the airplane stalls at a lower airspeed with the gear up. (C)Power-on stalls occur at lower airspeeds in shallower banks.

原始題號:0012725 題組:0 難易度:中

(B) 97. Glider A

Wingspan = 48 ft

Average wing chord = 4.5 ft

Glider B

Wingspan = 54 ft

Average wing chord = 3.7 ft

Determine the correct aspect ratio and its effect on performance at low speeds.

(A)Glider A has aspect ratio of 10.6, and will generate greater lift with less drag than will glider B. (B)Glider B has an aspect ratio of 14.5 , and will generate greater lift with less drag than will glider A. (C)Glider B has an aspect ratio of 10.6, and will generate less lift with greater drag than will glider A.