



# **Specimen coursework assignment**

## **M91 – Aviation and space insurance**

The following is a specimen coursework assignment including questions and indicative answers.

It provides guidance to the style and format of coursework questions that will be asked and indicates the length and breadth of answers sought by markers. The answers given are not intended to be the definitive answers; well-reasoned alternative answers will also gain marks.

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## Coursework submission rules and important notes

Before you start your assignment, it is essential that you familiarise yourself with the information in the *Coursework Support Centre* available on RevisionMate.

This includes the following information:

- These questions must not be provided to, or discussed with, any other person regardless of whether they are another candidate or not. If you are found to have breached this rule, disciplinary action may be taken against you.
- Important rules relating to referencing all sources including the study text, regulations and citing statute and case law.
- Penalties for contravention of the rules relating to plagiarism and collaboration.
- You must not use Artificial Intelligence (AI) tools to generate content (any part of an assignment response) and submit it as if it was your own work.
- Coursework marking criteria applied by markers to submitted answers.
- Deadlines for submission of coursework answers.
- You must not include your name or CII PIN anywhere in your answer.
- The total marks available are 200. You need to obtain 120 marks to pass this assignment.
- Your answer must be submitted on the correct answer template in Arial font, size 11.
- Answers to a coursework assignment should be a maximum of 10,000 words. The word count does not include diagrams however, it does include text and numbers contained within any tables you choose to use. The word count does not include referencing or supplementary material in appendices. **Please be aware that at the point an assignment exceeds the word count by more than 10% the examiner will stop marking.**

## Top tips for answering coursework questions

- Read the Learning Outcome(s) and related study text for each question before answering it.
- Ensure your answer reflects the context of the question. Your answer must be based on the figures and/or information used in the question.
- Ensure you answer all questions.
- Address all the issues raised in each question.
- Do not group question parts together in your answer. If there are parts (a) and (b), answer them separately.
- Where a question requires you to address several items, the marks available for each item are equally weighted. For example, if 4 items are required and the question is worth 12 marks, each item is worth 3 marks.
- Ensure that the length and breadth of each answer matches the maximum marks available. For example, a 30 mark question requires more breadth than a 10 or 20 mark question.

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The coursework questions link to the Learning Outcomes shown on the *M91 syllabus* as follows:

Question	Learning Outcome(s)	Chapter(s) in the Study Text	Maximum marks per answer
1	Learning Outcome 2	Chapters 2, 3 & 4	10 marks
2	Learning Outcome 3	Chapter 5	30 marks
3	Learning Outcome 3	Chapter 5	10 marks
4	Learning Outcome 4	Chapter 6	20 marks
5	Learning Outcome 5	Chapters 7 & 8	20 marks
6	Learning Outcome 6	Chapter 8	20 marks
7	Learning Outcome 7	Chapter 9	20 marks
8	Across more than one Learning Outcome	Across more than one chapter	30 marks
9	Across more than one Learning Outcome	Across more than one chapter	20 marks
10	Across more than one Learning Outcome	Across more than one chapter	20 marks

## M91 Specimen coursework questions and answers

### Question 1 – Learning Outcome 2 (10 marks)

You are a loss adjuster appointed by the aviation insurer of ABC Airlines. You were instructed to investigate and report on the cargo claims arising from a recent accident involving an ABC Airlines aircraft. Some of the cargo carried on the aircraft was damaged.

You have established that some of the damaged cargo was inadequately packaged by the consignor. You have obtained the air waybills (air consignment notes) to investigate the extent of ABC Airlines' liability.

The aircraft was on an international flight governed by the Warsaw Convention 1929, as amended by the Hague Protocol 1955.

- (a) Explain, with justification, **one** key provision of the air waybills that you must review when determining the extent of ABC Airlines' liability for the damaged cargo. (4)
- (b) Explain, with justification, the extent to which ABC Airlines is able to limit its liability, excluding the key provision you have explained in (a) above, for the damaged cargo. (6)



## Answer to question 1 – 10 marks

- (a) A key provision, regarding the circumstances of the accident, of the Warsaw Convention 1929, as amended by Hague Protocol 1955, is Chapter 2: Documentation of Carriage and, in particular, Article 9 of Section III - Documentation relating to cargo.

Article 9 states that if the carrier accepts goods without certain particulars which are set out in Article 8 regarding:

- 1) The places of departure and destination;
- 2) Any agreed stopping places; and
- 3) A notice that liability may be limited under the Warsaw Convention.

Then, the carrier is not entitled to limit its liability under the Warsaw Convention. The absence of the above particulars in the air waybills does not remove the opportunity for ABC Airlines to still rely on limits of liability. If there are not financial limits stated in the air waybills then the carrier's liability is limited to the lower of the cost of the loss incurred and the value calculated at 19 special drawing rights per kilogram.

- (b) ABC Airlines is able to limit its liability for the damaged cargo in several ways.

As the damaged cargo was inadequately packaged by the consignor, ABC Airlines may be able to remove themselves from liability as per Article 10 of Chapter 2:

Documentation of Carriage, Section III - Documentation relating to cargo.

Article 10 provides that the consignor is responsible for any irregularities or incorrect details on the airway bill. Depending on the extent of the damage and whether the inadequate packaging has led to the cargo being weighed or documented incorrectly, ABC Airlines may also be able to be indemnified by the consignor if ABC Airline can prove it has suffered sufficient damages.

By ensuring it complies with the all the provisions set out in the Warsaw Convention, as amended by the Hague Protocol, ABC Airlines can ensure that it can avail to the limits of liability of these protocols.

Additionally, ABC Airlines needs to ensure that Article 23 is considered, as if there is 'inherent defect, quality or vice of the cargo carried' (CII study text, M91 Aviation and space insurance, 2021-22), then it may be able to rely on its terms and conditions of carriage to reduce or avoid liability.



## Question 2 – Learning Outcome 3 (30 marks)

You are an insurance broker. You have been approached by one of your airline clients to make changes to their aircraft hull and liability insurance. The insurance is on the London Aircraft Insurance Policy (AVN 1D).

The changes requested by your client are:

- Amending the basis of Section I hull cover total loss for disappearance in flight from 30 days to 10 days.
- Reducing the hull deductible by 50% from the standard London airline deductible.
- Providing coverage under the liability Sections II and III for some or all of the perils excluded under the War, Hijacking and Other Perils general exclusion 8 of AVN 1D.

Your client has asked you to provide advice as to how these changes should be implemented and provide advice on certain implications of the changes.

- (a) Explain **one** implication for the insurer should the disappearance in flight time limit be reduced from 30 days to 10 days. (4)
- (b) Explain, with justification, how the client's deductible reduction request can be achieved. (12)
- (c) Identify the clause that will provide coverage for some of the specified perils excluded under general exclusion 8 of AVN 1D, in respect of Sections II and III. (2)
- (d) Explain, with justification, **three** significant limitations within the clause, you have identified in (c) above, that you would draw to the client's attention. (12)

## Answer to question 2 – 30 marks

- (a) The standard AVN 1D policy has a 30 days disappearance in flight condition with the insurer only having a total loss settlement due after the 30 days have expired. Reducing the timescale to 10 days has the implication for the insurer that the total loss will be declared after that short period, meaning that settlement of the claim is then due. If the aircraft is subsequently found, after the settlement of the claim, the issue of salvage could become contentious.
- (b) The client's request reflects the fact that the aircraft hull deductible is a significant sum which the client might not which to incur in the event of a claim. However, the hull deductible only applies to partial losses and would not apply in the event of a total

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losses. It is highly unlikely that the airline hull and liability insurers would agree to reduce the standard airline hull deductible as this has been set by market agreement.

The method by which the client can control their financial commitment in the event of a partial loss claim, will be by purchasing a separate hull deductible insurance. This insurance can reduce the client's exposure to individual losses or to an aggregation of losses during the policy period. As the client has asked for a 50% reduction in the deductible this implies that the additional insurance would need to be written on an individual loss basis. This additional insurance will follow the terms and conditions of the AVN 1D policy to ensure that there is consistency in cover.

- (c) An option for the client is to add clause AVN 52E, which writes back into the insurance the exclusions regarding aviation liabilities.
- (d) A limitation for the client of clause AVN 52E is that the sum insured provided in respect of this coverage is a sub limit that applies on an annual aggregate basis and may be significantly lower than the overall policy liability limit.

A further limitation is automatic termination of clause AVN 52E in the event of the outbreak of war between any two or more major powers. The termination takes effect as soon as the aircraft makes its first landing after the outbreak of war.

Another limitation for the client of clause AVN 52E is that the insurer can cancel the insurance provided under this endorsement by giving at least 7 days' written notice to the insured. This option introduces an element of uncertainty into the client's understanding of its prospective future insurance arrangements.

## **Question 3 – Learning Outcome 3 (10 marks)**

You are an insurance broker. You have been approached by one of your airline clients that operate a fleet of aircraft. The client has acquired a number of spare aircraft engines that are stored in various locations. These engines are used as replacements on their own aircraft and other airlines' aircraft as required.

The client has an aircraft hull and liability policy.

The client has asked you to explain the extent of insurance cover that may be available for these spare aircraft engines whilst they are in storage and undergoing testing.

- (a) Identify the type of cover available for these spare aircraft engines. (1)
- (b) Describe the extent of cover, if any, under the type you have identified in (a) above, for when a spare engine is moved out of storage, tested and later fitted (9)

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to another airline's aircraft.

## **Answer to question 3 – 10 marks**

- (a) The cover option for these spare aircraft engines is spares all risks insurance.
- (b) When a spare engine is moved out of storage, tested and later fitted to another airline's aircraft the cover available under the spares all risks insurance, if any, is as follows:
- (i) **Moved out of storage**  
The coverage under the spares all risks insurance includes transit to anywhere in the world subject to the geographic limits stated in the policy.
  - (ii) **Testing**  
This is a standard exclusion under the spares all risks insurance. However, the exclusion may be deleted subject to the insurer's agreement and the application of the applicable aircraft deductible.
  - (iii) **Fitted to another airline's aircraft**  
Coverage under the spares all risks insurance continues until the commencement of the operation of fitting it to, or placing it on board, the aircraft to which it is destined. The engine would then be covered by the other airline's aircraft hull policy.

#### **Question 4 - Learning Outcome 4 (20 marks)**

You are an insurance broker. One of your clients, FOA plc, operates a fleet of small aircraft.

The aircraft hull policy for this client contains an Additions and Deletions clause AVN 17A and an Aircraft laying-up returns clause AVN 26A. The aircraft insurance hull rate is 0.75% of the aircraft value per year. The policy period is 12 months from 1<sup>st</sup> January.

The client notifies you of the following:

- The addition of an aircraft of identical type and value to those in FOA plc's current fleet with effect from 1<sup>st</sup> February. The aircraft is valued at USD3 million.
- The addition of a larger and more expensive aircraft to those in FOA plc's current fleet with effect from 1<sup>st</sup> March. The aircraft is valued at USD5 million.
- The addition of several more larger and more expensive aircraft at various dates later in the policy period. Each of these aircraft will be valued at USD 5 million.
- The aircraft added from the 1<sup>st</sup> February will be laid up from 1<sup>st</sup> October to the end of the policy period.

Your client's aviation insurer has provided you with a ground risk rate of 0.25%.

- (a) Calculate, **showing all your workings**, the additional premium for the addition of the aircraft of identical type and value. (4)
- (b) Calculate, **showing all your workings**, the return premium for the aircraft of identical type and value which is to be laid up. (7)
- (c) Explain how the Additions and Deletions clause would be applied for **each** of the aircraft types being added to the policy. (9)

#### **Answer to question 4 – 20 marks**

- (a) The calculation for the additional aircraft of identical type and value is:

multiplying the aircraft value by the hull rate = the annual premium,

therefore:

$$\text{USD } 3,000,000 \times 0.75\% = \text{USD } 22,500$$

As this aircraft is not on risk for the entire annual period, the annual premium is calculated on a pro-rata basis:

Period 1 February to 31 December = 334 days on risk

therefore:

$$\text{USD } 22,500 \times 334/365 = \text{USD } 20,589.04$$

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The additional premium due for the aircraft of identical type and value is USD20, 589.04.

- (b) Aircraft laying-up return clause AVN 26 allows the aircraft to be laid up for an agreed period at an agreed hull rate lower than the full flight risks hull rate.

The aircraft has been advised as being laid-up from the 1 October to the end of the policy period. Therefore, there is a return premium due to be paid to the client.

The return premium is the pro-rata element of the annual deducted from the ground risk rate. This can be calculated as two separate premiums or combined in a single calculation.

The period 1 October to 31 December is 92 days.

The return premium is the change in rate multiplied by the pro-rata period multiplied by the aircraft value. Therefore,  $(0.75\% - 0.25\%) * 92/365 * \text{USD } 3,000,000 = \text{USD } 3,780.82$ .

The return premium due for the aircraft of identical type and value is USD 3,780.82.

- (c) Clause AVN 17A is an example of an additions and deletions clauses, which is applicable to hull cover only. The effect of AVN 17A is to allow aircraft of the same type and value to be included automatically during the policy period. This automation allows the operation of the policy, during the policy period, to be straightforward and efficient for both the client and Insurer.

In the case of the first additional aircraft, as it is of identical value and type to the aircraft currently on the policy, AVN 17A would allow for the automatic addition of the aircraft to the policy. This addition would apply the existing hull rate to the aircraft. The only action required, would automatically be included. The only action would be for the client to ensure that the insurer is notified in writing of the additional aircraft within 10 days of its addition to the policy. This notification would be undertaken by me, on behalf of the client.

In the case of the second additional aircraft, which is larger and greater in value than the existing aircraft, a new rating would need to be sought and agreed from the insurer. It is likely that there will be a different rating for this additional aircraft, as it is a material change in risk. This would all need to be completed prior to the additional of the second aircraft.

In the subsequent cases of later additional aircraft of the same value and type as the second additional aircraft, AVN 17A will allow for their automatic addition at the appropriate rate. These automatic additions will follow the same procedure as that of the first additional aircraft in the case of the first aircraft addition. This is as they are of the same type and value of an aircraft already covered under the policy.

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## Question 5 – Learning Outcome 5 (20 marks)

You are an underwriter for an aviation insurer. You are approached by an aviation insurance broker who is seeking to place the aviation products liability insurance for a prospective client who manufactures a range of aircraft components and ground handling equipment.

These manufactured components and equipment comprise of:

- Hydraulic systems for landing gear.
- Hydraulic systems for wing flaps.
- Aircraft catering equipment.
- Ground-based auxiliary power units.

The aviation insurance broker has provided you with the historic and projected turnovers and the claims experience.

- (a) Explain, with justification, the significance of the historic and projected turnovers to your consideration of the aviation products liability insurance. (8)
- (b) Identify, with justification, **four** key items of additional information you would need to obtain from the aviation insurance broker. (12)

## Answer to question 5 – 20 marks

- (a) Aviation products liability insurance is generally written on a losses occurring basis. A claim is dealt with by the policy in force at the time the accident occurs and not the policy in force at the date the claim is notified to the policyholder.

Historic and projected turnovers are key in the consideration of aviation products liability insurance, as they are indicators of volume of business transacted for the client over their business lifetime. These turnovers will be split by type of product, to reflect the differing risks that each type of product will contribute to the overall assessment of the insurance proposition.

Additionally, the turnovers by type of product will be divided between military and non-military users alongside division between USA and non-USA activity. The extent of military turnover may justify a lower rate as the risks arising from use of the products is accepted by the customer. Correspondingly, USA turnover can justify a higher rate due to the higher potential frequency and/or cost of claims reflecting the USA's litigious culture.

The breakdown of turnover by type of product assists in understanding the quantity of units in use and, therefore, the aggregate exposure in place.

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Finally, the annual changes in historical and projected turnovers are good indicators of the trends in the client's business. These changes are essential material information as the future nature of the business, and its aggregate risks, may be very different to the historical performance. The rating of the business needs to reflect these changes, to ensure it reflects the aggregate exposures.

(b) Four key items of additional information are:

- Whilst historic turnover is important, it needs to be considered in light of the number of units in active service. The number of units in active service would be important information to assess the full scope of the risk. Clearly units which are now out of active service present little if no liability risk exposure.
- The claims record, by type of product, would allow for comparison with the relevant annual turnovers. This information would allow for both claims frequency and average claim costs as a percentage of turnover to be computed, and provide an indication of future trends in claims.
- Criticality of the unit in the safe operation of an aircraft is an important feature. This knowledge is hugely important in assessing the potential consequence of the failure of a product, and therefore the potential cost of a loss to the insurer. For example, the failure of a hydraulic system for landing gear may prevent the safe landing of an aircraft, with potential catastrophic consequences. Correspondingly, failure of a ground-based auxiliary power unit may delay or prevent an aircraft being ready to take-off on time, which is an inconvenience rather than grounds for a catastrophic claim.
- Introduction of different materials, e.g. carbon fibre, into existing types of products or new technology may mean that historic claims experience may not reflect future experience. Understanding the potential effects of new technology and/or new materials will be important in assessing the potential future cost of claims.



## Question 6 – Learning Outcome 6 (20 marks)

You are a claims adjuster for an aviation insurer. You have been notified by an insurance broker that an aircraft operated by one of the aviation insurer's policyholders has crashed on landing resulting in injuries to each of the twelve passengers on board.

There were two UK families on board in addition to the crew.

The aircraft is UK registered and was operating on a UK domestic flight.

You appoint a lawyer to investigate the extent of the insured's liability for the crash.

- (a) Identify, with justification, the **four** key considerations which you would expect the lawyer to include in his preliminary report. (12)
- (b) Explain, with justification, based on your answer to (a) above, the factors you would expect the lawyer to take into account when recommending a liability claims reserve. (8)

## Answer to question 6 – 20 marks

- (a) The four key considerations which I would expect the lawyer to include in his preliminary report are:
1. The nationality, name, age and address of each of the passengers, and the extent of their relationships both with other passengers and any other family members. This information would allow the lawyer to understand the following:
    - Name provides an identity.
    - Nationality might create a situation where some non-UK nationals might be able to seek higher levels of compensation from a non-UK country, e.g. USA where compensation awards can significantly exceed UK levels.
    - Age is an initial indication of whether the individual is a child, working adult or retired person. Whilst subsequent information on careers, dependencies and incomes will likely provide greater clarity, an initial assessment of the insurer's potential exposure will be determined by this information.
  2. The extent of the injuries to each passenger.
    - The extent of injuries will allow the insurer to determine the extent of activity it may be able to undertake to mitigate the effects of such injuries. Examples could be, with the injured parties' agreement, referral to specialist medical treatment facilities and the use of rehabilitation services. The appropriate deployment of such medical services could make a significant improvement in the recovery period of an injured person or, at the least, minimise the long-term effects of their injuries if they are of a permanent nature.

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3. A copy of the aircraft's papers including its navigation log and maintenance records.
  - This information would enable the extent to which the aircraft was being used in an appropriate manner, was on a recognised flight and had been maintained in accordance with the manufacturer's recommendations. If the accident is subsequently proved to be due, in part or total, to a maintenance fault, having early confirmation of who undertook the maintenance, and where and when that maintenance took place, would support any subsequent action to hold them responsible.
  - Details of the flight crew including pilots' licences, ratings, latest medical checks, total hours flown including the time on this type of aircraft together with information on duty hours over, say, the last week (CII study text, M91 Aviation and space insurance, 2018).
  - An understanding of the experience, capability and suitability of the pilots who were involved in the accident might provide indication that there was something less than ideal. Clearly, the starting expectation would be that the crew were blameless for the accident, however if deficiencies are identified their relative importance regarding the circumstances of the accident might influence how the claim is handled. For example, if the pilots were at the end of a long duty, at the time of the accident, it might be more difficult to defend the claim than if it was their first flight for several days after a period of rest.

- (b) Damages would, in the absence of any non-UK injured passenger considerations, be calculated under English law. As the flight was domestic, rather than international, the Montreal Convention 1999 would not apply.

I would expect the lawyer to base his calculations of the initial liability claims reserve on the sums awarded by the courts in recent types of injuries. The calculations would include, for each passenger, the following factors to the extent to which they apply to the individual:

- Age.
- Loss of future income (where the award reflects potential loss or reduction in future income).
- Dependents.
- Medical costs arising from the accident to date and estimated for the future.
- Pain and suffering.
- Loss of amenities of life.

(CII study text, M91 Aviation and space insurance, 2021-22).

Where elements of the information are unknown, such as where the recovery period of an individual can only currently be estimated, I would expect the lawyer to make educated assumptions, based on the experiences of previously injured individuals in arriving at a claim cost per passenger and in the aggregate.

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This would be a provisional reserve, which would be subject to review as more information subsequently became available.

## Question 7 – Learning Outcome 7 (20 marks)

You are an underwriter for an aviation insurer. The aviation insurer is considering entering the space insurance market.

You have been asked by the Managing Director to review the space market.

The Managing Director has informed you that there will be adequate reinsurance and other capital support in place.

The Managing Director has the following concerns:

- lack of statistical loss data available in the space market for launch and in orbit risks;
- accumulation on launch and maximum probable in orbit losses.

(a) Describe **four** risk factors that you would use to assess an individual space risk in order to address the Managing Director's concerns.

(12)

(b) Explain how you would control the accumulation risk on a launch and which defined methods are available to assess maximum probable "in orbit" losses.

(8)

## Answer to question 7 – 20 marks

(a) The space market is one of the most volatile classes of business within the insurance industry. Space losses are low in frequency but extremely high in severity, often with the total destruction of a satellite whose value will likely be in USD millions. I will analyse the space market when considering underwriting space risks.

There are four categories of space insurance:

- Pre-launch.
- Launch and in orbit.
- In orb.t
- Third party liability.

To properly review each of the four categories, I will need to analyse each of the following four significant risk factors:-

1. The market cycle - in common with other classes of insurance the space market follows a cycle where rates and capacity fluctuate. Additional capacity enters the market, probably following a period of low claims costs, in search of profitable trading. Correspondingly, capacity leaves the market, following a period of high

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claims cost, and rates charged by the remaining insurers rise. This cycle continues and is driven by the relatively low number of satellite launches per year, compared with say the number of aircraft in use, and the disproportionate effect that the loss of a single satellite can have on the profit and loss account for the aggregate space insurance market.

If the insurance market is at a point where there are plenty of capacity and low rates it would appear sensible to wait for the cycle to advance, before entering the market, to a point of higher rates, where the prospect of profitable trading is increased.

2. Claims information / loss data - a thorough analysis of claims and loss history in respect of each of the four different categories of space insurance is required. This will allow me to understand the differing claims frequencies and claims costs, both average and maximum. Whilst the Managing Director has stated that there will be adequate reinsurance and capital in place, an understanding of the dynamics of each category of space insurance will provide guidance as to how to maximise the effective of reinsurance and capital for the insurer's benefit.
3. Technological considerations - the launch of satellites, whilst once a national government preserve, e.g. NASA, is now increasingly exposed to private enterprise. Whilst established launch vehicles have a proven record, the number and range of new launch vehicles means that the statistical information on their reliability is not known. Additionally, new satellites contain features not incorporated in existing in-orbit satellites, so that the data on performance and failure rates is an unknown. In part these uncertainties can be overcome, if not completely removed, by ensuring that new satellites have redundancy built into them, to prevent equipment failure impeding performance. Furthermore, building satellites capable of working longer than their initially intended useful life-time is a further risk reduction measure. As satellites are customised items, rather than 'off the peg' items, understanding the range and nature of the on-board equipment, and the implications should a component fail, is critical in calculating an appropriate rate.
4. Sum insured - the pre-launch sum insured will build up over a period of time as the components are sourced and incorporated into the satellite. A claim early in the building period will be relatively low in cost, whilst one towards the end of the building period will be close to the value at launch. Partial claims may occur as depending on the nature of the damage it may be possible to repair the satellite.

The launch phase will be 'all or nothing' as failure of the launch vehicle will result in destruction of the satellite, meaning a total loss claim.

In orbit claims can vary from a modest loss of satellite capability, due perhaps to a

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component failure, through to a total loss due to collision. The value at risk declines in proportion to the remaining working life of the satellite. Consequently, total loss claims towards the end of a satellite's working life may be relatively inexpensive.

- (b) Historically, a single satellite was launched into space on a launch vehicle. This meant there was no accumulation risk.

Increasingly, as the launch capabilities of launch vehicles have increased, two or more satellites can be put into space on a single launch vehicle. Additionally, the increasing uses to which satellites can be put means that they can vary in weight from a few kilograms up to several tonnes. These means that many satellites, owned by differing parties, can be on the same launch. Therefore, to avoid over commitment the insurer will need to have in place a robust programme of exposure measurement to ensure that it knows its accumulated exposure on each and every launch in which it has an interest.

When in orbit, the maximum probable loss will be established through realistic disaster scenarios. I will assess a number of realistic disaster scenarios in order to determine maximum probable losses for each of the different space insurance categories. These scenarios will address those identified by Lloyds, namely solar energetic particle event, space weather, generic defect and space debris (CII study text, M91 Aviation and space insurance, 2021-22).

These scenarios will support the coordination of the available capital and reinsurance so that the modelling of the space insurance we underwrite reflects not just known previous events – see 2 above – but also potential catastrophes.

## **Question 8 – Across more than one Learning Outcome (30 marks)**

You are a claims handler for an aviation insurer. One of the aviation insurer's policyholders operates a fleet of narrow-bodied aircraft. The policyholder has a hull and liability policy.

The policyholder has notified you of an accident where one of their aircraft has overrun on landing at an airport in the European Union. The aircraft has hit a private house 200 metres off the end of the runway.

The private house and airfield infrastructure, consisting of lighting and fencing at the end of the runway, have been destroyed. There were no personal injuries as a result of the accident.

The aircraft is identified on the policy schedule.

You appoint a lawyer to investigate the extent of the policyholder's liability for the third party damage.

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- (a) Identify, with justification, **six** significant liability considerations the lawyer would include in their report regarding the policyholder's liability. (12)
- (b) Explain, with justification, **one** action you as the claims handler will need to take for **each** of the six liability considerations you have identified in (a) above. (18)

## Answer to question 8 – 30 marks

- (a) Six significant liability considerations that I would expect the lawyer to include in their report would be:
1. Confirmation that the flight was subject to the Montreal Convention 1999. Whilst this may appear self-evident, as the aircraft was arriving at an airport in the European Union, the aircraft may have diverted from its intended route which not have been subject to this Convention. Irrespective of whether the Convention applies or not, the air waybills will need to be examined to prove and validate the legitimacy of the cargo that was on board the aircraft.
  2. Preliminary details of the aircraft including factual information comprising registration number, type and air frame. Other details include engine hours since last overhaul, date of last overhaul and the date of the latest maintenance certificate. This information is required to establish the operational safety of the aircraft, to validate the extent of the policyholder's risk management of the aircraft.
  3. A copy of the aircrafts papers, including navigation log and insurance certification. This evidence will enable assessment as to the extent to which the flight was within the validity of cover provided by the aviation insurance policy.
  4. A copy of the flight plan and load sheet. To validate that the aircraft was permitted to be in the relevant airspace and was not operating beyond its certified carrying capacity.
  5. Detailed information of the damaged property. For the private residence, this will include ownership details including any mortgage interest, estimated value and an initial estimated cost of repair. For the airfield infrastructure, there will also be an initial estimated cost of repair. For both the private residence and airport infrastructure, they may be consequential liabilities to consider. This could comprise alternative accommodation, and associated costs such as transport, for the occupier of the private residence. For the airfield operator, it could include costs arising from the airport being out of action, or only able to operate at a reduced turnover, until the lighting and fencing is repaired or replaced.
  6. A factual report from the airline as to the relevant events before and those leading up to the accident, together with any subsequent information, including enquiries made by third parties and aircraft accident investigators. This information may well

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be disclosable during any litigation arising from the accident, so it is important that facts are established as soon as possible, rather than opinions, before memories fade and evidence is lost.

- (b)
1. I will need to ensure that the policyholder's liability in respect of every air waybill is established and that a suitable aggregate reserve is calculated, perhaps with the assistance of a cargo surveyor, and recorded on the insurer's claims system.
  2. I will check that cover for the aircraft is valid and in force. That all warranties are met and whether there is any potential duplication of cover, such as a separate cargo policy and an all risks policy.
  3. I will establish the extent of the opportunity to exercise subrogation to seek recovery from the maintainer of the aircraft.
  4. I will check the extent to which, if any, the aircraft was operating outside its capabilities and the extent to which this contributed to the accident. There may be an opportunity to either void the policy and/or decline to indemnify the policyholder.
  5. I will review the potential claims costs for both the damaged property and the consequential losses to seek to establish how the cost of the claims can be minimised. Such minimisation could include overtime working to restore the damaged property, the rapid purchase and installation of replacement airfield infrastructure and support to the airport operator to minimise the disruption to their business.
  6. I will check all the facts to ensure that any inconsistencies are explored and resolved, so that there is the best possible understanding of the accident and the circumstances leading up to it. Such exploration and resolution will ensure that the facts are correct and prevent other parties from exploiting avoidable deficiencies in them, to our cost.

## **Question 9 - Across more than one Learning Outcome (20 marks)**

You are a claims handler for an aviation insurer. One of the insurer's liability insurance policyholders, HG plc, is a fixed based operator who leases a hangar in the UK. The insurance is on the ARIEL Airport Owners' and Operators' Liability Policy (48FLY00001). The policy limit of liability is £5million.

HG plc uses the space in the hangar for aircraft repairs, servicing and hangarage.

HG plc has notified you of an incident involving one of their employees who was driving an aircraft tug owned by HG plc. The incident has the following features:

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- The tug has collided with an aircraft, parked inside the hanger, damaging its wing.
- Fuel has spilt from the aircraft wing and ignited.
- The fire has damaged one other aircraft in the hanger together with other third party property in the hanger comprising of:
  - Pilots headsets.
  - Personal effects.
  - Aircraft spare parts.
- The driver of the tug is seriously injured.
- The aircraft tug is seriously damaged and beyond economic repair.

The policyholder also advises you that the aircraft tug is the only one they own. They would like immediate reimbursement for its replacement.

- (a) Explain **two** significant items of additional information you would need to be able to response to any claims made by third parties. (6)
- (b) Explain, with justification, the extent of cover provided by the liability insurance for the tug driver's injury. (4)
- (c) Explain, with justification, the extent of cover provided by the liability insurance for the damage to the third party property. (6)
- (d) Explain, with justification, the extent of cover provided by the liability insurance for the damage to and replacement of the aircraft tug. (4)

## **Answer to question 9 – 20 marks**

- (a) The two significant items of additional information I would need to response to any claims made by third parties are:
1. Validation of circumstances of the accident - obtain statements from the tug driver and any other witnesses to the accident or its consequences. These statements will be crucial in identifying the extent of the insured's liability for the accident and its consequences, including whether there were any features which broke the chain of events from the accident to the damages that occurred after the accident.
  2. Third party interests - establishing the interests of third parties in the damaged property and the extent of damage that has occurred to each item of damaged property.
- (b) The injured tug driver is an employee of HG plc and the incident occurred when driving an aircraft tug owned by HG plc.

48FLY00001 contains a general exclusion one which states that 'This policy does not

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cover liability for bodily injury to any person, who at the time of sustaining such injury is engaged in the service of the insured or acting on his behalf, or liability for which the insured or his insurer may be held liable under any workman's compensation, unemployment compensation or disability benefits law or any similar law' (CII study text, M91 Aviation and space insurance, 2021-22).

Therefore, the exclusion applies to the injury incurred by the tug driver so the aviation insurer has no involvement in any claim made by the tug driver.

- (c) Section 2 of 48FLY00001 provides cover for hangarkeepers' legal liability.

Section 2 cover applies in respect of the insured's legal liability for loss of or damage to aircraft or aircraft equipment which is not owned, rented or leased by the insured, while on the ground in the care, custody or control of or while being serviced, handled or maintained by the insured.

Section 2 cover excludes loss or damage to clothes, personal effects and merchandise (CII study text, M91 Aviation and space insurance, 2021/22 P5/19).

Therefore, 48FLY00001 provides cover for the insured's legal liability, subject to the policy's monetary limit as follows:

- Impact damage to the wing of the aircraft parked inside the hanger is covered provided it is a non-owned aircraft.
- Fire damage to one other aircraft in the hangar is covered provided it is a non-owned aircraft.
- Fire damage to pilots' headsets may be covered unless they rank as clothing, personal effects and merchandise in which case the general exclusion would apply.
- Fire damage to personal effects would not be covered due to the general exclusion.
- Fire damage to aircraft spare parts is covered as it is within the Section 2 cover description of 'aircraft or aircraft equipment'.

- (d) The aircraft tug that is seriously damaged and beyond economical repair is owned by the insured, HG plc.

Sections 1 and 3 of 48FLY00001 exclude loss of or damage to property owned by the insured. Section 2 provides cover only in respect of various classes of non-owned equipment.

Consequently, there is no cover in place under 48FLY00001 for damage caused to the aircraft tug.

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## Question 10 – Across more than one Learning Outcome (20 marks)

You are a claims adjuster for an aviation insurer. One of the aviation insurer's policyholders is a French registered charter airline operating a fleet of wide-bodied aircraft and has a hull and liability policy.

The policyholder has notified you of an accident to one of their aircraft, which has resulted in several deaths and multiple injuries to passengers. The aircraft was carrying passengers from Paris, France to Florida, USA. The policyholder has alleged that the accident was due to the negligence of the air traffic control authority in Florida. The air traffic control authority denies any responsibility for the accident.

- (a) Explain, with reference to appropriate regulation/legislation, the extent of any immediate payments that the policyholder may be required to make. (6)
- (b) Explain, with justification, the extent of any subsequent legal liability that the policyholder could have. (8)
- (c) Explain briefly, **three** reasons why a French national who was a passenger in the above accident might attempt to make a compensation claim in a US court for their injury. (6)

## Answer to question 10 – 20 marks

- (a) The flight, which originated in an EU state, is therefore governed by the EU Regulations 2027/97 as amended by EU Regulation 889/2002 when the Montreal Convention 1999 came into force for the EU. This regulation provides that in the event of a death to a passenger there is a minimum advanced payment of 16,000 SDRs. This minimum advance payment can be increased if the natural person entitled to compensation can demonstrate severe hardship. Any advance payment made can be off set against any future damage award.
- (b) The airline has strict liability for any death or injury to a passenger for damages up to 113,100 SDRs where the death or injury is caused by an accident. The airline can avoid or reduce the strict liability if it can prove that the death or injury was contributed to by the negligence of the claimant.

For damages in excess of 113,100 SDRs the airline has unlimited liability and is regarded as being at fault unless it can prove one or more of the following defences:

- The death or injury was not due to the airline's negligence.
- The death of injury was solely due to the negligence of a third party.

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- (c) Three reasons why a French national passenger may want to make a compensation claim in a US court are:
- Awards are generally given by a jury and may be inflated above the level awarded by a French judge.
  - In addition to a claim for economic damages there may also be an opportunity for a claim for non-economic losses, e.g. affection.
  - Punitive damages, in addition to compensation may be awarded.

## **Reference List:**

CII Study text, M91/P91, Aviation and space insurance, 2021-22.



## How to plan an answer for a coursework question

The following three plans are based on 10, 20 and 30 mark questions respectively.

### Question 1 – Learning Outcome 2 (10 marks)

You are a loss adjuster appointed by the aviation insurer of ABC Airlines. You were instructed to investigate and report on the cargo claims arising from a recent accident involving an ABC Airlines aircraft. Some of the cargo carried on the aircraft was damaged.

You have established that some of the damaged cargo was inadequately packaged by the consignor. You have obtained the air waybills (air consignment notes) to investigate the extent of ABC Airlines' liability.

The aircraft was on an international flight governed by the Warsaw Convention 1929, as amended by the Hague Protocol 1955.

- (a) Explain, with justification, **one** key provision of the air waybills that you must review when determining the extent of ABC Airlines' liability for the damaged cargo. (4)
- (b) Explain, with justification, the extent to which ABC Airlines is able to limit its liability, excluding the key provision you have explained in (a) above, for the damaged cargo. (6)

### **Question deconstruction**

- Review learning outcome 2 in the course material and the relevant information in the study text.
- Highlight the instructions within the question (which are circled in red above).
- What is the context? International flight subject to Warsaw Convention; cargo claims and air waybills.
- The first question asks for one key provision relating to liability.
- The second question asks about the extent to which the liability arising under the key provision can be limited.

### **Answer plan**

- Identify a key provision which allows for an answer to both parts (a) and (b).
- Parts (a) and (b) each require explanation and justification so provide support to prove the explanation of each one.
- As this is a 10 mark question, your answer should be shorter than the answers to either a 20 or 30 mark question. Part (b) is worth more marks than part (a).



## Question 4 - Learning Outcome 3 (20 marks)

You are an insurance broker. One of your clients, FOA plc, operate a fleet of small aircraft.

The aircraft hull policy for this client contains an Additions and Deletions clause AVN 17A and an Aircraft laying-up returns clause AVN 26A. The aircraft insurance hull rate is 0.75% of the aircraft value per year. The policy period is 12 months from 1<sup>st</sup> January.

The client notifies you of the following:

- The addition of an aircraft of identical type and value to those in FOA plc's current fleet with effect from 1<sup>st</sup> February. The aircraft is valued at USD 3 million.
- The addition of a larger and more expensive aircraft to those in FOA plc's current fleet with effect from 1<sup>st</sup> March. The aircraft is valued at USD 5 million.
- The addition of several more larger and more expensive aircraft at various dates later in the policy period. Each of these aircraft will be valued at USD 5 million.
- The aircraft added from the 1<sup>st</sup> February will be laid up from 1<sup>st</sup> October to the end of the policy period.

Your client's aviation insurer has provided you with a ground risk rate of 0.25%.

- (a) **Calculate**, **showing all your workings**, the additional premium for the addition of the aircraft of identical type and value. (4)
- (b) **Calculate**, **showing all your workings**, the return premium for the aircraft of identical type and value which is to be laid up. (7)
- (c) **Explain** how the Additions and Deletions clause would be applied for **each** of the aircraft types being added to the policy. (9)

### Question deconstruction

- Review learning outcome 3 in the course material and the relevant information in the study text.
- Highlight the instructions within the question (which are circled in red above).
- Consider the context which is the operation of an additions and deletions clause, and laid up premium.
- The marks for parts (a), (b) and (c) reflect the balance of the overall question. Parts (a) and (b) require all workings of the calculations to be shown.



## Answer plan

Part (a): Calculate an additional premium.

Part (b): Calculate a return premium.

Part (c): Explain the application of the additions and deletions clause.

As this is a 20 mark question, your answer should be longer than the answer to a 10 mark question but shorter than the answer to a 30 mark question.

## Question 2 – Learning Outcome 3 (30 marks)

You are an insurance broker. You have been approached by one of your airline clients to make changes to their aircraft hull and liability insurance. The insurance is on the London Aircraft Insurance Policy (AVN 1C).

The changes requested by your client are:

- Amending the basis of Section I hull cover total loss for disappearance in flight from 60 days to 10 days.
- Reducing the hull deductible by 50% from the standard London airline deductible.
- Providing coverage under the liability Sections II and III for some or all of the perils excluded under the War, Hijacking and Other Perils general exclusion 10 of AVN 1C.

Your client has asked you to provide advice as to how these changes should be implemented and provide advice on certain implications of the changes.

- (a) **Explain** **one** implication for the insurer should the disappearance in flight time limit be reduced from 60 days to 10 days. (4)
- (b) **Explain**, with justification, how the client's deductible reduction request can be achieved. (12)
- (c) **Identify** the clause that will provide coverage for some of the specified perils excluded under general exclusion 10 of AVN 1C, in respect of Sections II and III. (2)
- (d) **Explain**, with justification, **three** significant limitations within the clause, you have identified in (c) above, that you would draw to the client's attention. (12)

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## Question deconstruction

- Review learning outcome 3 in the course material and the relevant information in the study text.
- Highlight the instructions within the question (which are circled in red above).
- Consider the context which are changes to AVN 1C regarding disappearance time, the standard hull deductible and war and associated risks.

## Answer plan

Part (a) is an explanation of one implication. It is worth 4 marks.

Part (b) is an explanation worth 12 marks so needs to be answered accordingly in length and depth. It relates to the deductible request.

Part (c) is an identification which involves recognition and name, so only requires a few words.

Part (d) is an explanation of three significant limitations within the clause you have identified in part (c). Again it is worth 12 marks so requires an appropriate answer in length and depth.

As this is a 30 mark question, your answer should be longer than the answers to 10 and 20 mark questions.

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## Glossary of key words

### Analyse

Find the relevant facts and examine these in depth. Examine the relationship between various facts and make conclusions or recommendations.

### Construct

To build or make something; construct a table.

### Describe

Give an account in words of (someone or something) including all relevant, characteristics, qualities or events.

### Discuss

To consider something in detail; examining the different ideas and opinions about something, for example to weigh up alternative views.

### Explain

To make something clear and easy to understand with reasoning and/or justification.

### Identify

Recognise and name.

### Justify

Support an argument or conclusion. Prove or show grounds for a decision.

### Outline

Give a general description briefly showing the essential features.

### Recommend with reasons

Provide reasons in favour.

### State

Express main points in brief, clear form.