

# Analiza učinjenih RTF pogrešaka studenata u simuliranom i stvarnom aerodromskom zračnom prostoru

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**SVEUČILIŠTE U ZAGREBU  
FAKULTET PROMETNIH ZNANOSTI**

**Davor Žulj**

**ANALIZA UČINJENIH RTF POGREŠAKA STUDENATA U SIMULIRANOM  
I STVARNOM AERODROMSKOM ZRAČNOM PROSTORU**

**ZAVRŠNI RAD**

**Zagreb, 2023.**

**SVEUČILIŠTE U ZAGREBU**  
**FAKULTET PROMETNIH ZNANOSTI**  
**ODBOR ZA ZAVRŠNI RAD**

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Zadatak: **Analiza učinjenih RTF pogrešaka studenata u simuliranom i stvarnom aerodromskom zračnom prostoru**

Opis zadatka:

Objasniti svrhu radiotelefonske komunikacije te potrebu za njenom standardizacijom. Snimiti izgovorenu radiotelefonsku komunikaciju tijekom školskog leta i tijekom vježbi na simulatoru u aerodromskom zračnom prostoru. Analizirati pogreške učinjene tijekom školskog leta i vježbi na simulatoru te objasniti njihov učinak na daljnju komunikaciju, sam let te školovanje pilota i kontrolora.

Mentor:

Predsjednik povjerenstva za  
završni ispit:

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Ivana Francetić, prof., v. pred.

Sveučilište u Zagrebu  
Fakultet prometnih znanosti

**ZAVRŠNI RAD**

**ANALIZA UČINJENIH RTF POGREŠAKA STUDENATA U SIMULIRANOM  
I STVARNOM AERODROMSKOM ZRAČNOM PROSTORU**

**ANALYSIS OF RTF ERRORS MADE BY STUDENTS IN SIMULATED AND  
REAL AERODROME AIRSPACE**

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Zagreb, rujan 2023.

## SAŽETAK

U ovom radu analiziraju se učinjene radiotelefonske (*Radiotelephony* - RTF) pogreške studenata prijediplomskog studija Aeronautike Fakulteta prometnih znanosti u simuliranom i stvarnom aerodromskom zračnom prostoru. RTF je komunikacijski protokol koji se koristi u zračnom prometu radi sigurne i učinkovite razmjene informacija između pilota i kontrolora zračnog prometa. Cilj završnog rada je utvrditi razlike u pogreškama studenata kontrole zračnog prometa i pilota pri komunikaciji na simuliranom aerodromskom zračnom prostoru u usporedbi sa stvarnim.

Za potrebe istraživanja transkribirani su razgovori studenata na vježbama na aerodromskom simulatoru i stvarnih letova. Pogreške su razvrstane prema vrsti i učestalosti kako bi se omogućila detaljna analiza. Analizom podataka utvrđeno je da se pogreške strukture najčešće pojavljuju prilikom davanja odobrenja za polijetanje i slijetanje.

Rezultati ukazuju na to da su studenti kontrole zračnog prometa skloniji činiti jezične pogreške u simuliranom okruženju zbog manjka iskustva u ulozi kontrolora zračnog prometa, dok se u stvarnom okruženju studenti piloti suočavaju s drugačijim izazovima. Identifikacija ovih razlika može pridonijeti unapređenju obuke studenata u području RTF komunikacije, smanjenju pogrešaka tijekom stvarnih letova te poboljšanju sigurnosti u avijaciji.

**KLJUČNE RIJEČI:** RTF pogreške, aerodromski zračni prostor, simulirani zračni prostor, RTF komunikacija, studenti piloti

## SUMMARY

This bachelor thesis explores the analysis of RTF errors made by students of the undergraduate study programme of Aeronautics of the Faculty of Transport and Traffic Sciences in simulated and real aerodrome airspace. RTF is a communication protocol used in aviation to ensure safe and efficient exchange of information between pilots and air traffic controllers. The aim of the bachelor thesis is to identify differences in students' errors in communication between simulated and real aerodrome airspace.

For the purpose of the research conversations conducted during exercises at the simulator and actual flights were transcribed. Errors were categorized based on type and frequency to enable a detailed analysis. The data analysis revealed that structural errors predominantly occur when granting departure and landing clearances.

The findings indicate that air traffic control students are more prone to making linguistic errors in simulated environments due to their limited experience in the role of air traffic controllers, whereas student pilots face different challenges in the real environment. Identifying these differences can contribute to improving the training of students in the field of RTF communication, reducing errors during actual flights and improving safety in aviation.

KEYWORDS: RTF errors, aerodrome airspace, simulated airspace, RTF communication, student pilots

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# 1. UVOD

U ovom radu stavljen je fokus na istraživanje i analizu grešaka koje studenti čine prilikom komunikacije putem radiotelefonije u simuliranim te stvarnim aerodromskim zračnim prostorima.

Kako zračni promet sve više raste, važnost jezgrovite i precizne komunikacije između pilota, kontrolora zračnog prometa i drugih sudionika u zračnom prometu postaje ključna. RTF je standardizirani način komunikacije koji omogućuje efikasnu i brzu razmjenu informacija. Međutim, greške u RTF komunikaciji mogu imati ozbiljne posljedice, uključujući povećani rizik od nesreća i smanjenje efikasnosti zračnog prometa.

Cilj ovog završnog rada je analizirati vrste i učestalost pogrešaka koje studenti čine prilikom upotrebe RTF-a u simuliranom i stvarnom aerodromskom zračnom prostoru. Simulirani zračni prostor pruža sigurno i kontrolirano okruženje za obuku studenata, dok stvarni aerodromski zračni prostor predstavlja realne uvjete i izazove s kojima se suočavaju studenti piloti.

Korištenjem audio zapisa studenata smjera kontrola leta i smjera pilot, analize stvarnih i simuliranih slučajeva te prikupljanjem podataka o greškama u RTF komunikaciji, izrada ovog završnog rada istaknut će najčešće pogreške koje studenti čine. Smanjenje broja pogrešaka u RTF komunikaciji može značajno doprinijeti sigurnosti i učinkovitosti zračnog prometa te unaprijediti cjelokupno iskustvo svih sudionika u zračnom prometu.

## 2. STANDARDNE RIJEČI I FRAZE

Engleski je preferirani jezik za komunikaciju u zračnom prometu zbog opće rasprostranjenosti u svijetu. Piloti i kontrolori zračnog prometa različitih nacionalnosti i razina znanja komuniciraju jedni s drugima koristeći specijalizirani oblik engleskog jezika poznat kao „*zrakoplovni engleski jezik*“ koji se sastoji od zrakoplovne frazeologije i općeg engleskog jezika [1].

Standardna frazeologija obavezno se koristi u svim situacijama za koje je definirana. Opći jezik se koristi jedino kada standardna frazeologija nije dovoljna za prenošenje važnosti željene poruke. Komunikacija na radio frekvenciji mora se odvijati po najvišim standardima te nije dozvoljena pretjerana uporaba uljudnih fraza [2].

### 2.1. Slova ICAO abecede

Frazeologija je specifična jer se slova i brojevi izgovaraju na poseban način da bi se osigurala nedvosmislenost i bolja čujnost. Izgovor slova je propisan od strane Međunarodne agencije za civilno zrakoplovstvo (*International Civil Aviation Organization – ICAO*) te su sudionici zračnog prometa dužni pridržavati se pravilnog izgovora slova i brojeva. Prilikom izgovora određenih riječi potrebno je svako slovo izgovoriti zasebno. Primjer takvih riječi mogu biti pozivni znak zrakoplova ili naziv navigacijske stanice. Riječi od pet slova označavaju navigacijske točke te se izgovaraju kao riječ npr. KULEN, NIVES itd.

### 2.2. Predaja brojeva

Kada je jezik komunikacije engleski, brojevi se izgovaraju na način koji je razumljiv svim korisnicima zračnog prometa. Specifičnosti izgovora brojeva je vidljiva kod broja četiri koji se izgovara kao *FOWER* umjesto *FOUR* iz razloga što može doći do dileme s frazom „*for*“ koja se u standardnom jeziku jednako izgovara kao i broj četiri. Kod izgovora broja devet javlja se sličan problem jer se u njemačkom jeziku može zamijeniti za riječ „*nein*“ te je zato pravilan izgovor broja devet *NINER* [2].

Neka od pravila izgovaranja brojeva su [2]:

- (1) - Svi brojevi, koji se upotrebljavaju u predaji pozivnog znaka zrakoplova, smjera leta, smjera i brzine vjetera te smjera uzletno-sletne staze moraju se predavati tako da se svaka znamenka izgovara zasebno (npr. ***heading three two zero***).
  - a. - Kod razina leta se svaka znamenka izgovara zasebno, osim u slučaju razina leta u cijelim stoticama (primjerice FL ***100***).
  - b. - Postavke visinomjera moraju se izgovarati svaka znamenka zasebno, osim u slučaju postavke visinomjera od 1000 hPa te se izgovara kao TISUĆA (npr. 1000: QNH ***one thousand***, 1100: QNH ***one one zero zero***).
  - c. - Svi brojevi koji se upotrebljavaju u predaji kodova transpondera moraju se izgovarati svaka znamenka zasebno, osim kada je kod transpondera cijela

tisućica, te informacije se predaju izgovaranjem znamenke broja tisućica nakon koje se izgovara riječ TISUĆA (npr. 2000: squawk **two thousand**, 4200: squawk **four two zero zero**).

- (2) - Svi brojevi moraju se izgovarati svaka znamenka zasebno, osim onih opisanih u točki a.1. te brojeva koji sadržavaju cijele stotice i cijele tisućice gdje se izgovara svaka znamenka u broju stotica nakon čega slijedi riječ STO odnosno TISUĆA. Kombinacija tisućica i cijelih stotica se izgovara tako da se izgovara svaka znamenka u broju, a iza toga slijedi riječ TISUĆA za tisućice odnosno riječ STO za stotice (npr. 12 000: **one two thousand**, 800: **eight hundred**, 3400: **three thousand four hundred**).
- (3) - U slučaju ako je potrebno dodatno razjašnjene broja prenesenog u cijelim tisućicama i/ili stoticama, taj se broj onda izgovara svaka znamenka zasebno.

Neki od izuzetaka pravila prilikom predaje brojeva su [2]:

- (i) - Kada se informacije o relativnom smjeru prema nekom prometu ili objektu u konfliktu daju u obliku brojki na satu s 12 odjeljaka ta se informacija mora davati izgovaranjem brojki u obliku DEVET SATI ili DESET SATI (**ten o'clock**).
- (ii) - Uputa za zaokret od 360° izgovara se: „Make one three-sixty left/right.“
- (iii) - Uputa za zaokret od 180° izgovara se: „Make one one-eighty left/right.“
- (iv) - Vidljivost 9999 prilikom predaje METAR informacija izgovara se DESET.

### 2.3. Riječi i fraze

U RTF komunikaciji koriste se riječi i fraze koje govornici različitih materinjih jezika mogu razumjeti. Važno je uočiti količinu informacija koju određena fraza prenosi u RTF komunikaciji kako bi se poboljšala učinkovitost komunikacije. Jezik ima smisla samo ako se razumije kontekst u kojem se govore fraze. U engleskom jeziku postoji više riječi kojima se izražava neki pojam, dok se u avijaciji koristi jedna riječ čime se sprečava dvosmislenost. Primjer toga je fraza „*Affirm*“ kojom se zamjenjuje riječ „*da*“. Također, fraza „*Wilco*“ označava da je poruka shvaćena i da će se postupiti u skladu s njom [2].

Bitno je napomenuti da se fraza „*GO AHEAD*“ ne koristi više zato što je krivo tumačenje navedene fraze ponekad imalo za posljedicu da postaja koja prima poruku fizički krene naprijed. Umjesto nje je dovoljno izgovaranje pozivnog znaka radiopostaje koju se zove za nastavak emitiranja poruke od strane radiopostaje koja poziva [2].

### 2.4. Vrste poruka

Uspostava komunikacije i predaja poruka odvija se putem radiotelefonske veze za sljedeće vrste poruka i njihove prednosti u korištenju. Fraza „*MAYDAY MAYDAY MAYDAY*“ je vrlo poznata vrsta poruke koja se koristi u slučaju nevolje zrakoplova i putnika koji su u

ozbiljnoj opasnosti te im je potrebna neodgodiva pomoć. Sljedeća po prioritetu vrsta poruke je poruka hitnosti (poznatija kao „PAN PAN“ ili „PAN PAN MEDICAL“ fraza) koja ukazuje na hitnost, ali nije nužno potrebna neodgodiva pomoć. Ostale vrste poruka su detaljno objašnjene ispod: [2]

- (1) – Poruke o nevolji odnose se na zrakoplov i putnike u ozbiljnoj i neposrednoj opasnosti koja zahtjeva neodgodivo pružanje pomoći.
- (2) – Poruke hitnosti odnose se na sigurnost zrakoplova, plovila ili bilo kojeg drugog vozila ili osobe.
- (3) – Poruke o radiogoniometrijskom smjeru odnose se na predaju goniometarskih vrijednosti.
- (4) – Poruke o sigurnosti leta su:
  - a. poruke vezane za distribuciju plana,
  - b. poruke koje šalje operator zrakoplova ili pilot koje su od neposredne važnosti za zrakoplov u letu,
  - c. meteorološke poruke od neposrednog značaja za zrakoplov koji je već u letu ili se sprema uzletjeti (individualne poruke ili poruke koje se emitiraju neodređenom primatelju),
  - d. ostale poruke koje se odnose na zrakoplov u letu ili koje se sprema uzletjeti.
- (5) – Meteorološke poruke odnose se na predaju vremenskih podataka.
- (6) – Letačko operativne poruke su:
  - a. poruke koje se odnose na promjene u operativnom radu letenja,
  - b. poruke koje se odnose na opsluživanje zrakoplova,
  - c. poruke predstavnika operatora zrakoplova koje se odnose na promjene u zahtjevima za putnike i posadu, a koje nastaju kao posljedica neizbježnih odstupanja od uobičajenih operativnih redova letenja. Individualni zahtjevi putnika i posade nisu dopušteni,
  - d. poruke koje se odnose na nestandardna slijetanja,
  - e. poruke koje se odnose na žurno potreban materijal i dijelove zrakoplova,
  - f. poruke koje se odnose na rad ili održavanje službi neophodnih za sigurnost ili letačku operativnost zrakoplova.
- (7) – Državni telegram odnosi se na poruke koje državni suvereni ili osobe istoga ranga predaju iz zrakoplova u letu.

Redoslijed navedenih poruka predstavlja i redoslijed njihovih prioriteta.

### 3. OPĆA PRAVILA RAZGOVORA NA FREKVENCiji

U zrakoplovnom prometu učinkovita komunikacija je ključna za odvijanje letova s maksimalnom razinom sigurnosti i ekspeditivnosti. Kao i u svakoj ljudskoj aktivnosti, komunikacija igra sastavnu ulogu u zrakoplovnoj industriji, posebno iz perspektive sigurnosti zračnog prometa. Pogrešna komunikacija ili nesporazum u komunikaciji između pilota i kontrolora zračnog prometa zbog loše primjene pravila razgovora može dovesti do gubitka ljudskih života i velike materijalne štete [4].

#### 3.1. Poznavanje engleskog jezika

ICAO je 2008. godine je uveo zahtjev za poznavanjem engleskog jezika (*English proficiency requirement*). Piloti i kontrolori zračnog prometa ne smiju sudjelovati u zračnom prometu ako nemaju položenu razinu 4 (*Operational*) poznavanja engleskog jezika. Moraju postići minimalnu razinu 4 kod govora i razumijevanja engleskog jezika prema ICAO-ovoj ljestvici ocjenjivanja jezične sposobnosti. Aspekti koji se gledaju prilikom ispitivanja su: izgovor, struktura rečenica, vokabular, fluentnost govora, razumijevanje govora i interakcija, te se pomoću tih aspekata dobiva zaključna razina. Same razine se kreću od jedan do šest gdje je razina 1 „*Predosnovno znanje*“ (*Pre-elementary*) a razina 6 je „*Stručnjak*“ (*Expert*). Piloti i kontrolori zračnog prometa s razinom 6 poznavanja engleskog jezika učinkovitije primjenjuju pravila razgovora te su na takav način razumljiviji prilikom primjene frazeologije [5]. ICAO ljestvica poznavanja engleskog jezika je vidljiva na Slici 1.

LEVEL	PRONUNCIATION <i>Assumes a dialect and/or accent intelligible to the aeronautical community.</i>	STRUCTURE <i>Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.</i>	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Expert 6	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues and responds to them appropriately.
Extended 5	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/listener relationship effectively.
Operational 4	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.
Pre-operational 3	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation and frequently interfere with ease of understanding.	Basic grammatical structures and sentence patterns associated with predictable situations are not always well controlled. Errors frequently interfere with meaning.	Vocabulary range and accuracy are often sufficient to communicate on common, concrete, or work-related topics, but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary.	Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitations or slowness in language processing may prevent effective communication. Fillers are sometimes distracting.	Comprehension is often accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fail to understand a linguistic or situational complication or an unexpected turn of events.	Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Generally inadequate when dealing with an unexpected turn of events.
Elementary 2	Pronunciation, stress, rhythm, and intonation are heavily influenced by the first language or regional variation and usually interfere with ease of understanding.	Shows only limited control of a few simple memorized grammatical structures and sentence patterns.	Limited vocabulary range consisting only of isolated words and memorized phrases.	Can produce very short, isolated, memorized utterances with frequent pausing and a distracting use of fillers to search for expressions and to articulate less familiar words.	Comprehension is limited to isolated, memorized phrases when they are carefully and slowly articulated.	Response time is slow and often inappropriate. Interaction is limited to simple routine exchanges.
Pre-elementary 1	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.

Source: "Manual on the Implementation of ICAO Language Proficiency Requirements", International Civil Aviation Organization (2004).

Slika 1. ICAO ljestvica poznavanja engleskog jezika, [5]

### 3.2. Tehnika predaje govora

Unatoč visokoj razini standardizacije kod komunikacije između pilota i kontrolora zračnog prometa, pogreške se javljaju čak i kada obje strane govore istim materinim jezikom. U međunarodnim operacijama mogućnost pogrešne komunikacije još je veća. Kako bi se

održala kvaliteta razgovora na frekvenciji, potrebno je pratiti tehnike predaje prilikom komuniciranja. Neka od tih pravila su [2]:

- a) - prije govorenja na frekvenciji je potrebno slušati frekvenciji i provjeriti da nema interferencije s drugom postajom,
- b) - obavezno se informirati o tehnici ispravnog govorenja u mikrofon,
- c) - koristiti normalan konverzijski ton, govoriti jasno i razgovijetno,
- d) - govoriti ravnomjernom brzinom govora s maksimalnim iznosom od 100 riječi u minuti. Ako je potrebno da primatelj zapiše dijelove poruke, govoriti polaganije je poželjno,
- e) - govoriti ujednačenom jačinom govora,
- f) - prije ili nakon izgovora brojeva zaustaviti kratko govor jer se time olakšava razumijevanje,
- g) - izbjegavati zastajkivanje u govoru (npr. korištenje uzvika „m-m-m“),
- h) - pritisnuti tipku za govor do kraja prije no što se krene govoriti i u potpunosti ju otpustiti tek kada se poruka izgovori. Time se osigurava cjelovito prenošenje poruke,
- i) - prilikom prenošenja dugačkih poruka potrebno je napraviti stanke kako bih primatelj mogao zatražiti ponavljanje dijelova poruke ako je to potrebno.

### 3.3. CPDLC

Komunikacija preko podatkovne veze kontrolor-pilot (*Controller-pilot data link Communications* – CPDLC) je metoda komunikacije između kontrolora i pilota, koristeći podatkovnu vezu (*data link*) za održavanje komunikacije kontrole zračnog prometa (*Air traffic control* – ATC). Ova metoda komunikacije je alternativna metoda glasovnoj komunikaciji. Tekstualne poruke koje kontrolor zračnog prometa šalje pilotima se prikazuju na zaslonu pilotske kabine. CPDLC se koristi za izdavanje odobrenja, izmjenu informacija i zahtjeva te se koristi standardna frazeologija kao i inače u govornoj komunikaciji. Kontrolori zračnog prometa mogu izdati odobrenja poput dodjele razine leta, vektoriranja, dodjele brzine i sl. Piloti imaju mogućnost odgovaranja na poruke, traženja odobrenja i razmjene informacija. Prednosti ovog načina komunikacije su [6]:

- Manje govorne komunikacije na frekvenciji čime je reducirano zagušivanje frekvencije.
- Kontrolor zračnog prometa može primiti više zahtjeva istovremeno te se tako povećava kapacitet sektora.
- Smanjena je mogućnost krive interpretacije poruke (npr. zbunjenost oko pozivnog znaka zrakoplova koja se može pojaviti prilikom govora).
- Prebacivanje s jedne frekvencije na drugu je jednostavnije jer pilot ima tekstualni ispis frekvencije koju treba unijeti.

Neki od razloga protiv korištenja CPDLC-a su:

- Smanjivanje situacijske svjesnosti letačke posade koja se tijekom čitanja poruke ne može koncentrirati na ostale aspekte upravljanja zrakoplova i navigacije.
- Letačka posada ne dobiva poruke drugih zrakoplova koji koriste CPDLC te nema informaciju o položaju i namjeri drugih zrakoplova te se tako smanjuje situacijska svjesnost.
- Kompleksne poruke se izbjegavaju jer ako posada može samo djelomično ispuniti zahtjev, odgovor mora biti „*Unable*“ što rezultira većim opterećenjem za posadu i kontrolora zračnog prometa.
- Pomoću CPDLC-a je moguće poslati pogrešnu poruku zrakoplovu ili poslati poruku pogrešnom zrakoplovu.

Na primjer, kada se koristi govorna komunikacija, svaki član letačke posade čuje dolazni ili odlazni ATC prijenos. Koristeći glasovnu komunikaciju, prirodna sposobnost svakog člana posade da razumije dolazne ili odlazne prijenose za zrakoplov kojim upravlja osigurala je određenu razinu situacijske svjesnosti među letačkom posadom. Uz CPDLC, postupci moraju osigurati da piloti imaju ekvivalentu razinu situacijske svjesnosti kako bi razumjeli sadržaj i namjeru poruke na isti način.

Također, svaki član letačke posade dužan je pojedinačno pregledati svaku CPDLC poruku prije nego što odgovori na poruku koju je poslao kontrolor zračnog prometa. Ključan element za sigurnost situacije je da svaki član letačke posade za sebe pročita CPDLC poruku prije izvršavanja naredbe kako ne bi izveo krivu radnju koja se razlikuje od onoga što je sugerirano u poruci. Ako bi se poruku čitalo naglas može se pojaviti pogreška u čitanju u odnosu na ono što je stvarno napisano u poruci [7]. Slika 2 prikazuje primjer CPDLC poruke.

Controller	LVLU-6 CLIMB TO FL350 LVLU-23 REPORT LEAVING FL330 LVLU-24 REPORT MAINTAINING FL350
Flight crew	RSPD-1 WILCO

**Slika 2.** Primjer CPDLC poruke



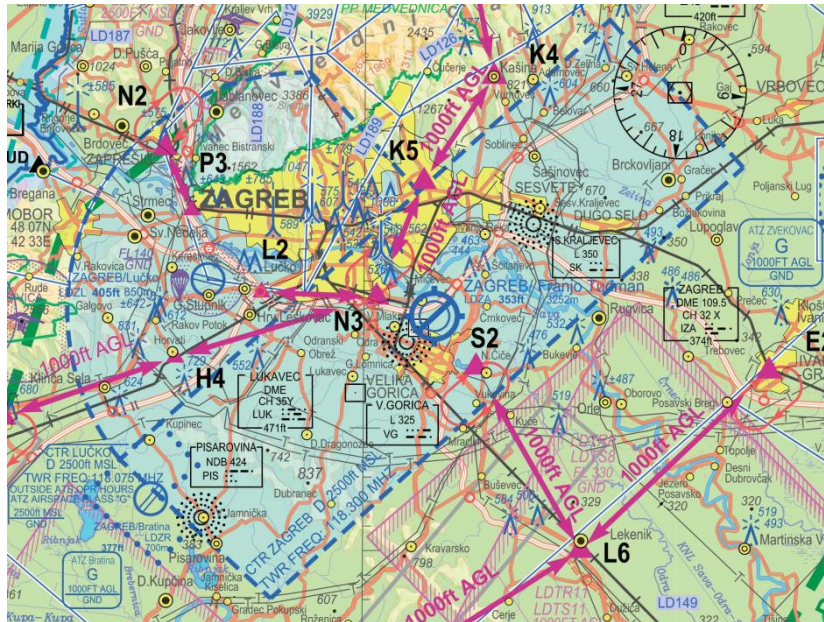
## 4. TRANSKRIPCIJA KOMUNIKACIJE NA AERODROMSKOM SIMULATORU STUDENATA KONTROLE LETA

Podaci istraživanja sastoje se od snimljene komunikacije u trajanju od pet sati, podijeljene u deset audio zapisa u simuliranom aerodromskom zračnom prostoru između studentata kontrolora zračnog prometa i pseudo-pilota. Transkribirani razgovori se nalaze u Prilogu 1. Komunikacija se odvija po vizualnim pravilima letenja (*Visual flight rules – VFR*). Studenti kontrole zračnog prometa su imitirali Zagreb toranj kako bi se različite faze napredovanja zrakoplova mogle prikazati kao što su odlazak i dolazak. Studenti su tijekom vježbi učinili veći broj pogrešaka koje su raspodijeljene po vrstama. Vrste komunikacijskih pogrešaka u interakciji između pilota i kontrolora zračnog prometa prikazane su u Tablici 1.

**Tablica 1.** Vrste komunikacijskih pogrešaka u interakciji između pilota i kontrolora zračnog prometa

Kategorija i potkategorija	Definicija/Objašnjenje
Jezične pogreške	Zastajkivanje u govoru, krivi izgovor brojeva/slova/riječi.
Kriva struktura poruke	Redosljed riječi korišten u poruci je neispravan, krivo davanje odobrenja.
Neispravna frazeologija	Korištena je frazeologija koja nije u skladu s propisanim procedurama za RTF.
Neispravan početni poziv	Početni poziv je izgovoren krivim redosljedom ili je u potpunosti izostavljen.
Izostavljanje informacija	Poruka nije predana sa svim potrebnim informacijama kako bi se osiguralo razumijevanje poruke.

Na simulatoru se komunikacija odvija u kontroliranoj zoni (*Control zone – CTR*) na području Zračne luke Franjo Tuđman u Zagrebu. CTR Zagreb se prostire od razine zemlje do 2500 ft iznad srednje razine mora. Kontrolirani zračni prostor u Zagrebu spada u zonu klase D u kojoj su omogućeni letovi prema VFR i instrumentalnim pravilima leta (*Instrument flight rules – IFR*). Kontrola zračnog prometa u prostoru klase D razdvaja IFR promet od drugog IFR i VFR prometa te daje informacije VFR prometu o svom ostalom prometu [8]. CTR Zagreb je prikazan na Slici 3.



Slika 3. CTR Zagreb, [9]

#### 4.1. Jezične pogreške

Jezična pogreška je tip pogreške koja se pojavljuje u obliku krivog izgovora riječi/slova ili zastajkivanja pri izgovoru u analizi snimaka, kao što je prikazano na primjeru 1 i primjeru 2. Primjer 1 sadrži krivo izgovoreno slovo ICAO abecede, dok u primjeru 2 student kontrole zračnog prometa zastajkuje u govoru.

##### Primjer 1. Jezične pogreške

P: Zagreb tower, 9ADAP, correction, departed from Lučko to Osijek, request low approach at Zagreb and maintaining 1500ft.

C: 9ADAP (papa krivo izgovoren), Zagreb tower, proceed to N3 at 1500ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to N3 point at, QNH 1019, RWY in use 1500ft, 9ADAP

C: 9ADAP, correct.

##### Primjer 2. Jezične pogreške

P: 9AJUT, at holding point RWY 05.

C: 9AJUT, roger, traffic is , am, C172 on final RWY 05, report traffic in sight.

P: 9AJUT, traffic in sight.

C: 9AJUT, am, behind C172 line up behind.

P: *behind C172 to line up behind, 9AJUT.*

C: *9AJUT, correct.*

## 4.2. Kriva struktura poruke

Pogreške krive strukture se pojavljuju kroz krivi poredak riječi u poruci i krivi redoslijed davanja odobrenja, kao što je vidljivo u primjeru 3 i primjeru 4. U primjeru 3 dolazi do krivog redoslijeda prilikom izdavanja odobrenja polijetanja. Primjer 4 prikazuje krivim redoslijedom dane informacije o tlaku zraka te smjeru i intenzitetu vjetra. Važno je koristiti isti redoslijed informacija u poruci kako bi se izbjegli problemi poput šuma i ostalih smetnji koje se potencijalno mogu pojaviti prilikom prijenosa. U konačnici je bitno da pilot zna što očekivati od informacija koje će čuti i kako bi lakše prepoznao što je rečeno .

### Primjer 3. Kriva struktura poruke

C: *9AJUT, cleared for takeoff, RWY 05, wind 080/13kt.*

P: *cleared for takeoff, RWY 05, 9AJUT.*

C: *9AJUT, correct.*

Ispravak:

C: *9AJUT, RWY 05, cleared for takeoff, wind 080/13kt.*

P: *RWY 05, cleared for takeoff, 9AJUT.*

C: *9AJUT, correct.*

### Primjer 4. Kriva struktura poruke

P: *Zagreb tower, 9AJFS, VFR training flight for aerodrome traffic circuits, request taxi instructions.*

C: *9AJFS, Zagreb tower, taxi via taxiway A to holding point RWY 05, QNH 1019, WIND 080/13kt.*

P: *To Taxi Via Taxiway A to holding point RWY 05, QNH 1019, 9AJFS.*

C: *9AJFS, CORRECT.*

Ispravak:

C: *9AJFS, Zagreb tower, taxi via taxiway A to holding point RWY 05, WIND 080/13kt, QNH 1019.*

## 4.3. Neispravna frazeologija

Poreške neispravne frazeologije su fraze i riječi koje nisu standardno korištene u radiotelefonskoj komunikaciji te nisu u skladu s procedurama, što je prikazano u primjeru 5. Primjer 5 prikazuje korištenje riječi koja ne daje korisnu informaciju prilikom ulaska u završni

krak školskog kruga. Postoji samo jedan završni krak (*final*) školskog kruga, za razliku od kraka niz vjetar (*downwind*) koji može biti lijevi ili desni.

#### Primjer 5. Neispravna frazeologija

P: *9AJFS, correction, left hand downwind RWY 05.*

C: *9AJFS, roger, report **left hand** final RWY 05.*

P: *9AJFS, wilco.*

Ispravak:

C: *9AJFS, roger, **report final** RWY 05.*

P: *9AJFS, wilco.*

#### 4.4. Neispravan početni poziv

Pogreške neispravnog početnog poziva pojavljuju se prilikom prvog javljanja studenata kada se izostavi početni poziv te kod krivog izgovora pozivnog znaka zrakoplova ili pripadajuće stanice kontrole zračnog prometa. Navedeno je prikazano u primjeru 6 gdje student kontrole zračnog prometa izostavlja pozivni znak vlastite stanice.

#### Primjer 6. Neispravan početni poziv

P: *Zagreb tower, 9ACVN, VFR flight to Sinj, request taxi instructions.*

C: *9ACVN, taxi via taxiway A to holding point RWY 05, ~~RWY in use 05~~, wind 080/13kt, QNH 1019.*

P: *to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ACVN.*

C: *9ACVN, correct.*

Ispravak:

P: *Zagreb tower, 9ACVN, VFR flight to Sinj, request taxi instructions.*

C: *9ACVN, **Zagreb tower**, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.*

#### 4.5. Izostavljanje informacija

Pogreške izostavljanja informacija su pogreške kada neki od sudionika u komunikaciji zaboravi izgovoriti propisane, ključne informacije te dijela standardne frazeologije, što je vidljivo u primjeru 7 i primjeru 8. U primjeru 7 izostavljena je informacija o smjeru aktivne

uzletno-sletne staze. Primjer 8 prikazuje izostavljenu informaciju o stazi upotrebe prilikom školskog kruga.

Primjer 7. Izostavljanje informacija

P: 9ADAP, on left hand downwind RWY 05.

C: 9ADAP, *report final*.

P: 9ADAP, wilco.

Ispravak:

P: 9ADAP, on left hand downwind RWY 05.

C: 9ADAP, continue approach, report final *RWY 05*.

P: 9ADAP, wilco.

Primjer 8. Izostavljanje informacija

C: 9AHDG, after touch and go turn left, *join left hand downwind*.

P: after touch and go to turn left to join left hand downwind RWY 05, 9AHDG.

C: 9AHDG, correct.

Ispravak:

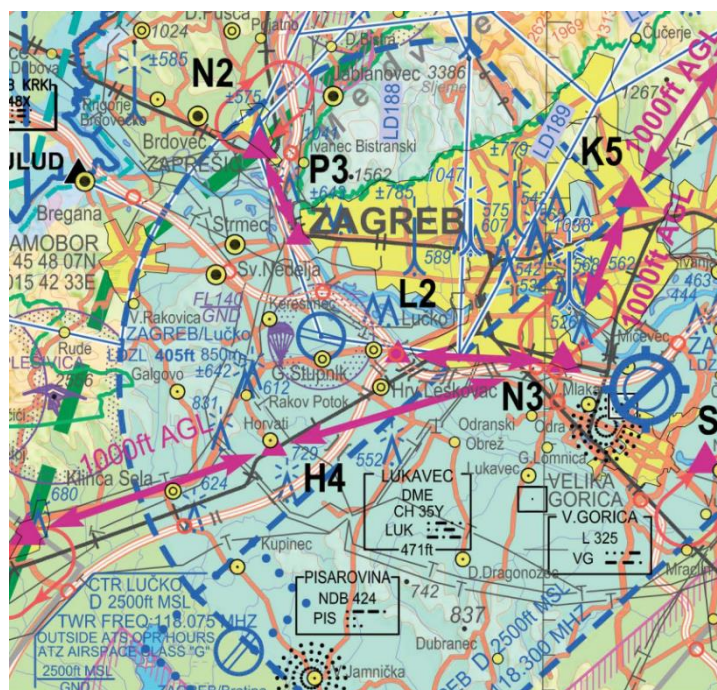
C: 9AHDG, after touch and go turn left, *join left hand downwind RWY 05*.

P: after touch and go to turn left to join left hand downwind RWY 05, 9AHDG.

C: 9AHDG, correct.

## 5. TRANSKRIPCIJA KOMUNIKACIJE STUDENATA PILOTA U AERODROMSKOM ZRAČNOM PROSTORU

Sakupljeni podaci iz aerodromskog zračnog prostora sastoje se od konverzacije tri studenta od kojih je svaki obavio po jedan let. Iste vrste pogrešaka su uzete u obzir kao i kod studenata kontrole leta. Transkribirani razgovori studenata se nalaze u prilogu 2. Letovi se odvijaju u kontroliranom zračnom prostoru CTR-a Lučko te djelomično u CTR-u Zagreb. CTR Lučko se prostire od razine zemlje do 2500 ft iznad srednje razine mora. Studenti su tijekom leta komunicirali s postajom Lučko toranj te su zbog potrebe prikupljanja podataka uzeti u obzir letovi u vremenima kada je postaja aktivna. Pogreške u komunikaciji su označene crvenom bojom dok su ispravljene označene zelenom bojom [9]. CTR Lučko je prikazan na Slici 4.



Slika 4. CTR Lučko, [9]

### 5.1. Jezične pogreške

Jezična pogreška je tip pogreške koja se pojavljuje u snimkama u obliku krivog izgovora riječi/slova ili zastajkivanja pri izgovoru kao što se očituje u primjeru 10 gdje student pilot zastajkuje u govoru što otežava razumijevanje.



### Primjer 10. Jezične greške

P: 9ADMB, N3, **am**, 1500ft, inbound Zagreb for touch and go.

C: 9ADMB, roger, orbit to the left overhead N3, call you back for approach, expect approach in about 4 or 5 minutes.

P: orbiting to the left, roger, 9ADMB.

Ispravak:

P: orbiting to the left **overhead N3**, roger, 9ADMB.

## 5.2. Kriva struktura poruke

Pogreške krive strukture se pojavljuju kroz krivi poredak riječi u poruci i krivi redosljed riječi prilikom ponavljanja odobrenja što je vidljivo u primjeru 11 i primjeru 12. U primjeru 11 student je krivim redosljedom ponovio odobrenje za polijetanje. Primjer 12 pokazuje kako je student izostavio informaciju o smjeru skretanja nakon polijetanja.

### Primjer 11. Kriva struktura poruke

P: 9ADMB, ready for departure.

C: 9MB, cleared for takeoff, 10R, wind 300/3kt

P: **cleared for takeoff RWY 10R**, 9ADMB.

Ispravak:

P: **RWY 10R, cleared for takeoff**, 9ADMB.

### Primjer 12. Kriva struktura poruke

P: 9ADAD, ready to copy ATC clearance.

C: 9ADAD, cleared VFR flight to LDOV, 1000ft AGL, when airborne right turn to N3.

P: 9ADAD, and squawk?

C: 9ADAD, call you back later for SQUAWK.

P: cleared VFR flight to LDOV, when airborne **1000ft inbound** N3, 9ADAD.

C: 9ADAD, correct, report ready.

P: 9ADAD, wilco.

Ispravak:

P: cleared VFR flight to LDOV, 1000ft AGL, when airborne to turn right, to proceed N3 point, 9ADAD.

### 5.3. Neispravna frazeologija

Pogreške neispravne frazeologije su fraze i riječi koje nisu standardno korištene u radiotelefonoj komunikaciji te nisu propisane u skladu s procedurama kao u primjeru 13 gdje je student zaboravio upotrijebiti riječ *correction* kako bi ispravio svoju pogrešku u poruci.

#### Primjer 13. Neispravna frazeologija

P: Zagreb tower, 9ADMB, inbound N3, 1500ft.

C: 9ADMB, Zagreb tower, RWY in use 04, QNH 1017, report N3.

P: RWY 04, QNH 1017, wilco, 9MB, 9ADMB.

Ispravak:

P: RWY in use 04, QNH 1017, wilco, 9MB, correction, 9ADMB.

### 5.4. Neispravan početni poziv

Pogreške neispravnog početnog poziva pojavljuju se prilikom prvog javljanja kontroli zračnog prometa kada se izostavi početni poziv te kod krivog izgovora pozivnog znaka zrakoplova ili pripadajuće stanice kontrole račnog prometa, kao u primjeru 14. U ovom primjeru student je skratio pozivni znak zrakoplova prilikom prvog kontakta s tornjem iako to nije bilo dozvoljeno od kontrole zračnog prometa. U ICAO Annexu 10, Volume II, 5.2.1.7.3.3.1 navodi se: „*Abbreviated radiotelephony call signs, as prescribed in 5.2.1.7.2.2, shall be used only after satisfactory communication has been established and provided that no confusion is likely to arise. An aircraft station shall use its abbreviated call sign only after it has been addressed in this manner by the aeronautical station*” [10].

#### Primjer 14. Neispravan početni poziv

P: Lučko tower, 9AD, request startup for VFR flight.

C: 9ADAD, Lučko tower, startup approved, QNH 1026.

P: startup approved. QNH 1026, 9ADAD.

Ispravak:

P: Lučko tower, 9ADAD, request startup for VFR flight.



## 5.5. Izostavljanje informacija

Pogreške izostavljanja informacija su pogreške u kojima dolazi do izostavljanja propisanih, ključnih informacija i dijela standardne frazeologije, što je vidljivo u primjeru 15 i primjeru 16. U primjeru 15 student nije ponovio informaciju o redosljedu zrakoplova za prilaz. Primjer 16 pokazuje kako je student izostavio informaciju iznad koje točke izvodi manevar orbitiranja.

### Primjer 15. Izostavljanje informacija

C: 9ADMB, you will be number 2 or number 3, expect holding overhead N3.

P: 9ADMB, roger.

Ispravak:

P: number 2 or number 3, roger, 9ADMB.

### Primjer 16. Izostavljanje informacija

P: 9ADMB, N3, am, 1500ft, inbound Zagreb for touch and go.

C: 9ADMB, roger, orbit to the left overhead N3, call you back for approach, expect approach in about 4 or 5 minutes.

P: orbiting to the left, roger, 9ADMB.

Ispravak:

P: orbiting to the left overhead N3, roger, 9ADMB.

## 6. ANALIZA UČINJENIH POGREŠAKA U KOMUNIKACIJI

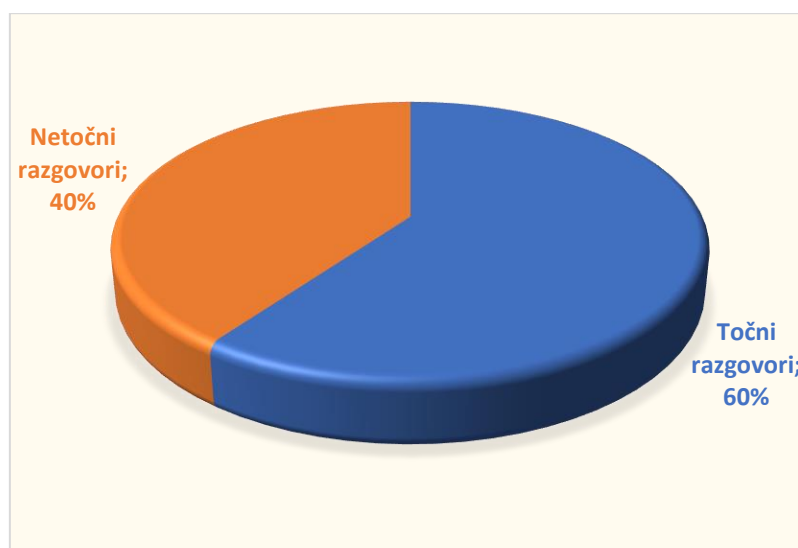
Za analizu učinjenih pogrešaka u komunikaciji su korišteni transkripti razgovora koje su studenati usmjerenja kontrola leta radili za vrijeme vježbi iz predmeta Aerodromski simulator, a studenti usmjerenja pilot radili za vrijeme letenja u aerodromskom zračnom prostoru. U analizi je prisustvovalo pet studenata kontrole leta te tri studenta pilota. Transkribirane su treća i četvrta vježba svih pet studenata te po jedan let svakog studenta pilota za analizu. Treća vježba sadrži pet VFR zrakoplova, od kojih su tri u odlasku, a dva u dolasku. Četvrta vježba sadrži šest VFR zrakoplova, od kojih su četiri u dolasku, a dva u odlasku što ju čini kompleksnijom i kompliciranijom studentima kontrole zračnog prometa zbog zahtjevnije razine koordinacije. Letovi studenata pilota u aerodromskom zračnom prostoru Lučko i Zagreb su stvarni primjeri letova te su snimljeni u uvjetima kada je stanica Lučko toranj aktivna za potrebu analize.

### 6.1. Prosjek pogrešaka

Pri analizi pogrešaka prikazan je omjer točnih i netočnih razgovora studenata kontrole leta i pilota. Pogreške poput izostavljanja informacija, jezičnih pogrešaka, neispravne strukture, krivog početnog poziva i krive frazeologije su analizirane u transmisijama između studenata pilota i kontrole zračnog prometa te studenata kontrole leta i pseudo-pilota.

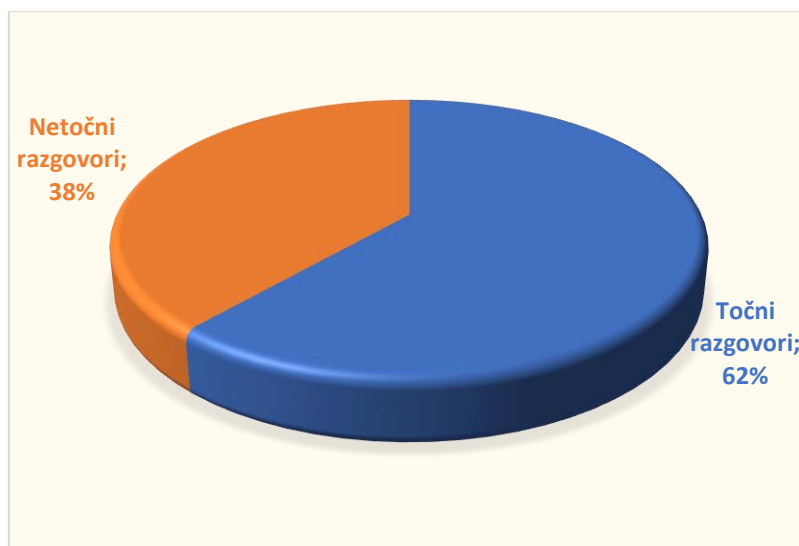
#### Analiza letova pilota

Student A je u jednom letu razmijenio 20 razgovora s kontrolom zračnog prometa od kojih je 12 bilo točno, a osam razgovora je sadržavalo neku vrstu pogreške u poruci. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 1.



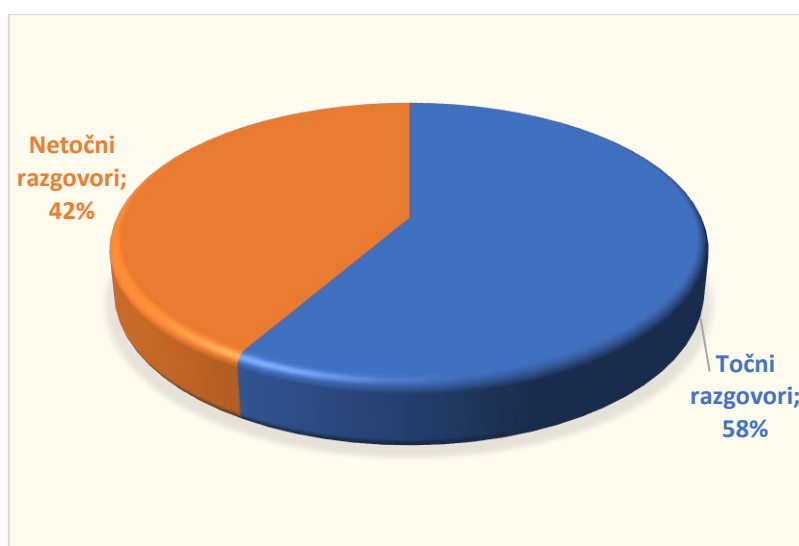
**Grafikon 1.** Prosjek točnih i netočnih razgovora studenta pilota A

Student B je u svom letu razmijenio 13 razgovora s kontrolom zračnog prometa od čega je 8 razgovora bilo točno, a pet razgovora je sadržavalo pogrešku. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 2.



**Grafikon 2.** Prosjek točnih i netočnih razgovara studenta pilota B

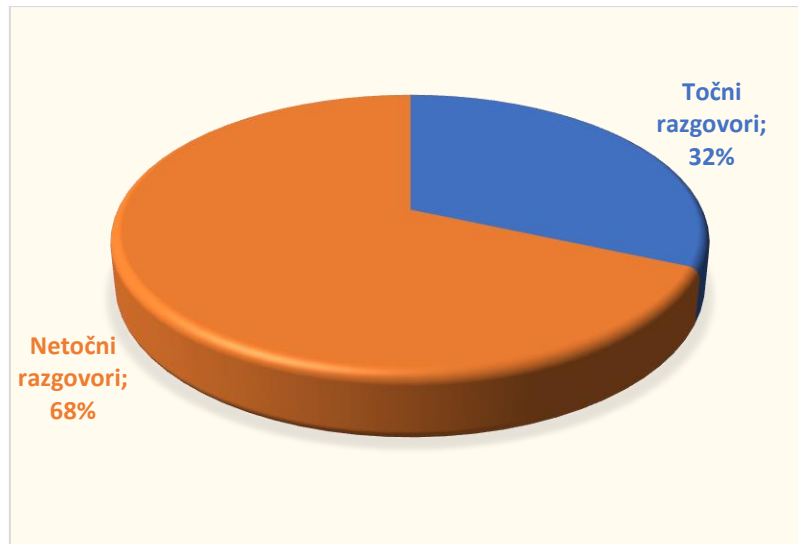
Student C je ukupno razmijenio 12 razgovora s kontrolom zračnog prometa u svom letu. Od tih 12 razgovora, pet razgovora je pilot pogrešno izgovorio. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 3.



**Grafikon 3.** Prosjek točnih i netočnih razgovara studenta pilota C

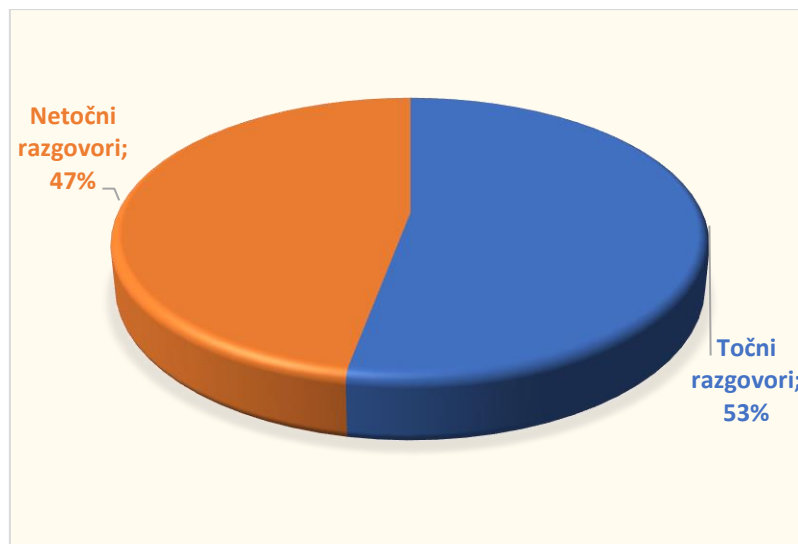
Analiza Vježbe broj 3 studenata kontrole leta

Student D ukupno je razmijenio 38 razgovora sa pseudo-pilotom u vježbi 3. Od 38 razgovora u 26 razgovora je pronađena pogreška. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 4.



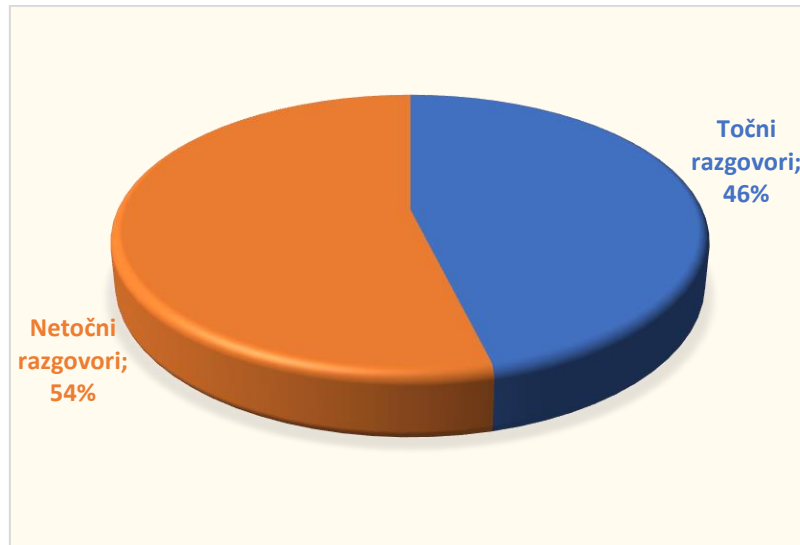
**Grafikon 4.** Prosjek točnih i netočnih razgovara studenta D kontrole leta u vježbi 3

Student E razmijenio je 34 razgovora sa pseudo-pilotom u vježbi 3. Od 34 razgovora u 16 razgovora je utvrđena pogreška. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 5.



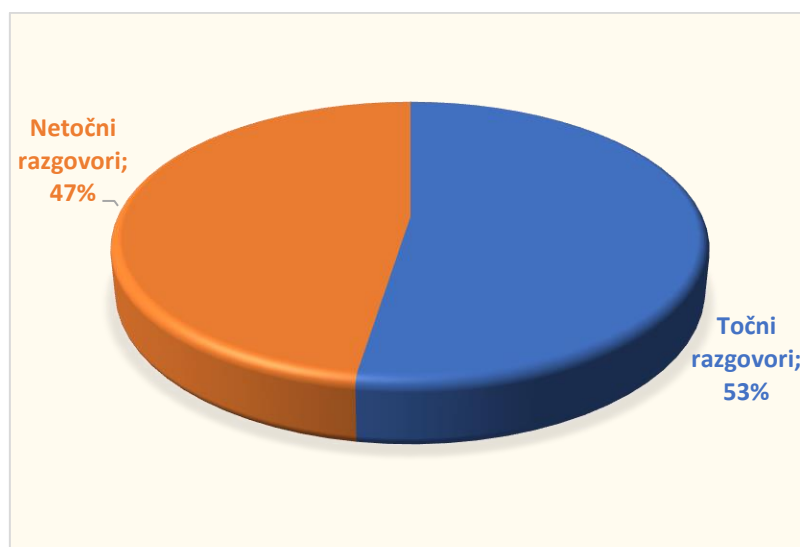
**Grafikon 5.** Prosjek točnih i netočnih razgovara studenta E kontrole leta u vježbi 3

Student F u vježbi 3 razmijenio je 39 razgovora sa pseudo-pilotom. Od 39 razgovora, 21 razgovor je sadržavao pogrešku. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 6.



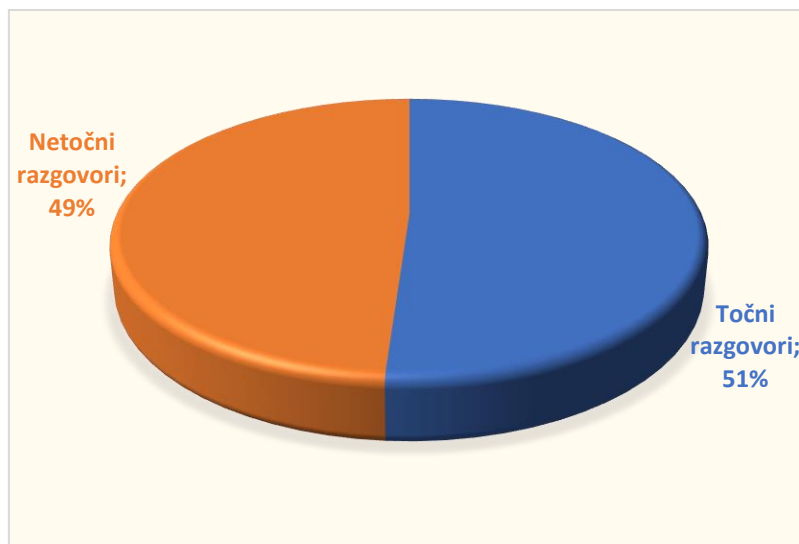
**Grafikon 6.** Prosjek točnih i netočnih razgovara studenta F kontrole leta u vježbi 3

Student G je ukupno razmijenio 40 razgovora sa pseudo-pilotom. Od 40 razgovora u 19 razgovora je pronađena pogreška. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 7.



**Grafikon 7.** Prosjek točnih i netočnih razgovara studenta G kontrole leta u vježbi 3

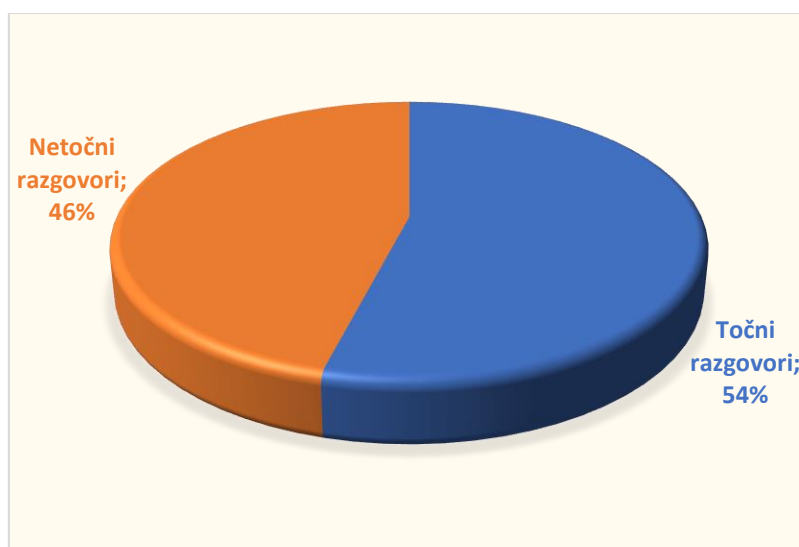
Student H je sa pseudo-pilotom razmijenio 45 razgovora. Od 45 razgovora su 22 razgovora sadržavala pogrešku. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 8.



**Grafikon 8.** Prosjek točnih i netočnih razgovara studenta H kontrole leta u vježbi 3

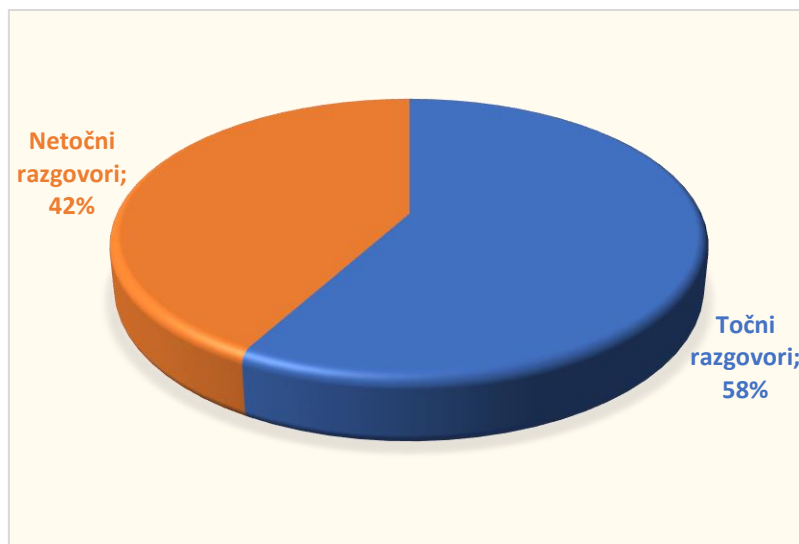
#### Analiza Vježbe broj 4 kontrole leta

Student D je u vježbi 4 razmijenio 37 razgovora sa pseudo-pilotom od čega je 17 sadržavalo pogrešku. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 9.



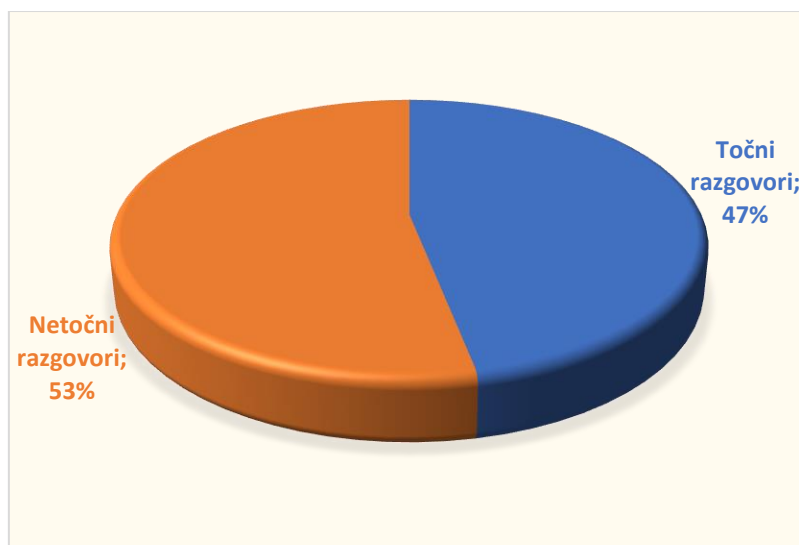
**Grafikon 9.** Prosjek točnih i netočnih razgovara studenta D kontrole leta u vježbi 4

Student E je razmijenio 31 razgovor sa pseudo-pilotom u vježbi 4. Od 31 razgovora u 13 razgovora je pronađena pogreška. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 10.



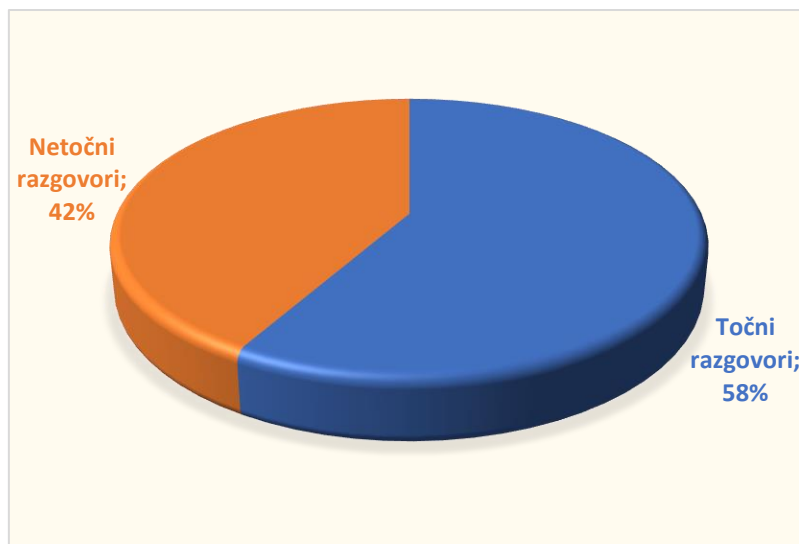
**Grafikon 10.** Prosjek točnih i netočnih razgovara studenta E kontrole leta u vježbi 4

Student F je ukupno razmijenio 32 razgovora sa pseudo-pilotom u vježbi 4. U 17 razgovora je utvrđena pogreška. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 11.



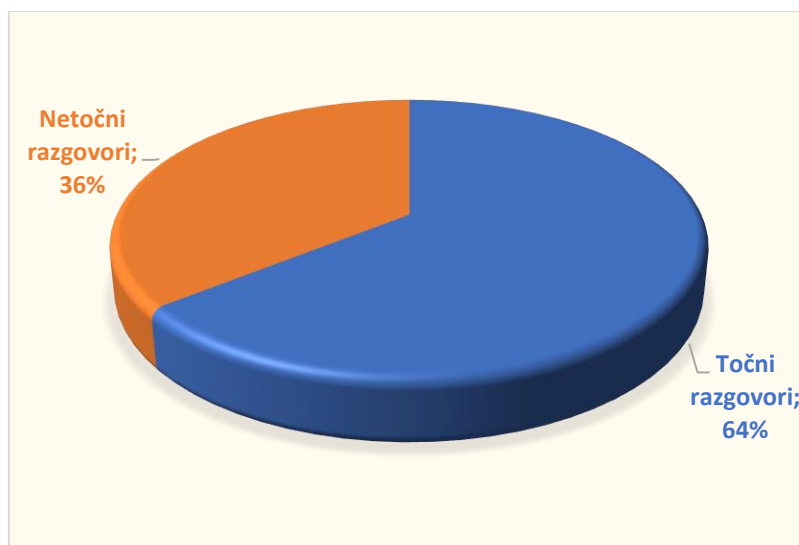
**Grafikon 11.** Prosjek točnih i netočnih razgovara studenta F kontrole leta u vježbi 4

Student G je u vježbi 4 razmijenio 36 razgovora sa pseudo-pilotom. Od 36 razgovora, 15 je sadržavalo pogrešku. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 12.



**Grafikon 12.** Prosjek točnih i netočnih razgovara studenta G kontrole leta u vježbi 4

Student H razmijenio je 42 razgovora sa pseudo-pilotom u vježbi 4. U 15 razgovora je pronađena pogreška. Omjer točnih i netočnih razgovora u postotku je prikazan u Grafikonu 13.

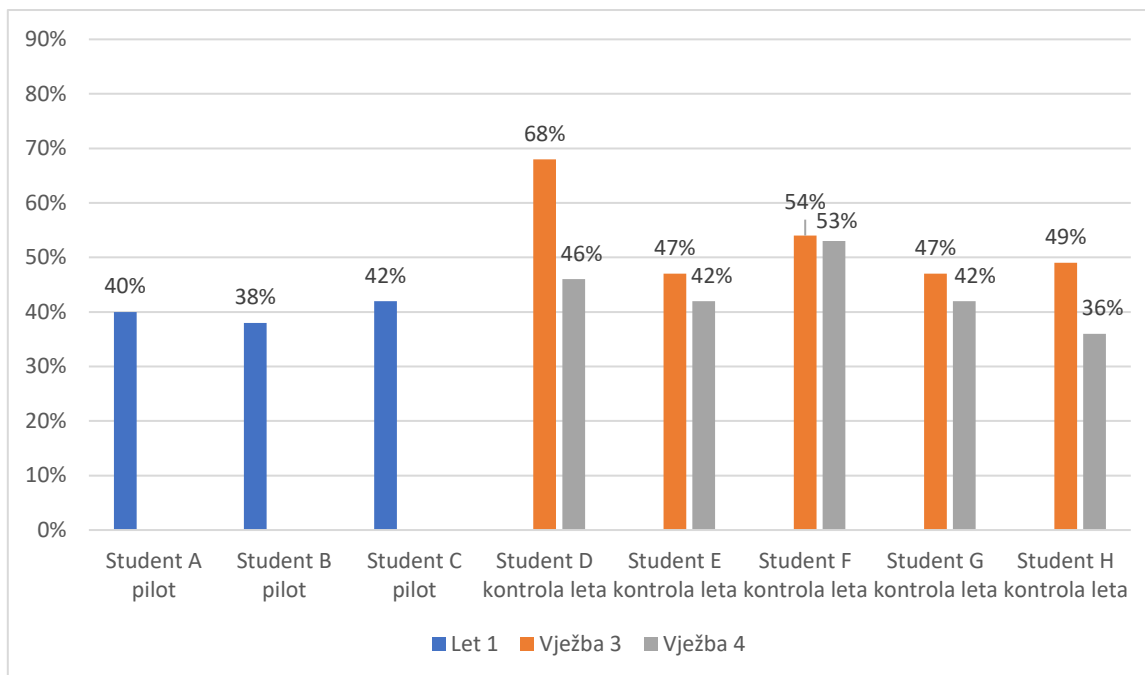


**Grafikon 13.** Prosjek točnih i netočnih razgovara studenta H kontrole leta u vježbi 4

## 6.2. Usporedba prosjeka pogrešaka studenata

U analizi su uspoređeni studenti usmjerenja pilot i studenti usmjerenja kontrola leta kroz obje vježbe. Postotak pogrešaka je prikazan u Grafikonu 14. Iz Grafikona 14 se može očitati koji student je imao najmanje, odnosno najviše grešaka.



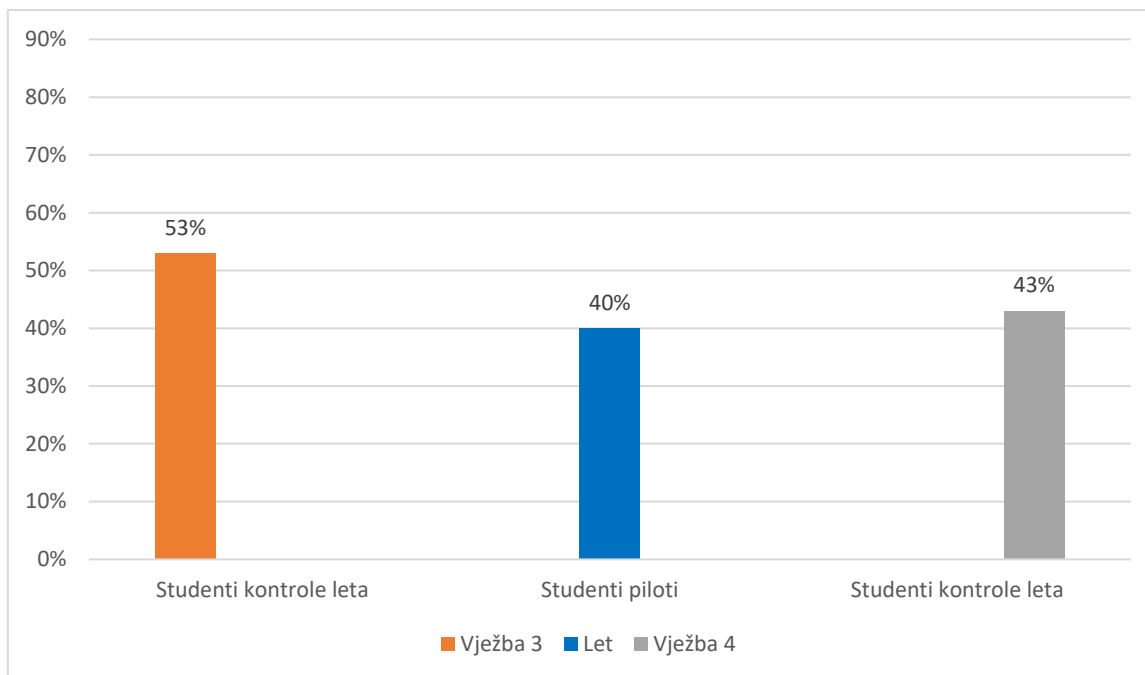


**Grafikon 14.** Postotak pogrešaka leta 1 studenata pilota te vježbe 3 i 4 kontrole leta

Iz Grafikona 14 vidljivo je kako su studenti piloti imali manji postotak pogrešaka naspram studenata kontrole leta. Također se može uočiti da je vidljiv napredak kod svih studenata kontrole leta s vježbe 3 na vježbu 4, posebice kod studenta D. Student E i G su imali podjednak postotak pogrešaka kroz vježbe 3 i 4. Student F je imao najmanji napredak u smanjenju postotka pogrešaka između vježbi 3 i 4. Student H je imao blagi napredak kroz vježbe.

### 6.3. Prosjek svih pogrešaka studenata

U ovom dijelu analiziran je prosjek svih pogrešaka pilota kroz njihove letove te prosjek svih pogrešaka studenata kontrole leta kroz vježbe 3 i 4. Pogreške koje su napravili piloti su zbrojene te je napravljen prosjek pogrešaka kroz sva tri leta, što je napravljeno i za studente kontrole leta. U Grafikonu 15 može se uočiti smanjenje postotka pogrešaka između vježbe 3 i 4 za studente kontrole leta te usporedba s prosjekom pogrešaka studenata pilota.



**Grafikon 15.** Prosjek pogrešaka studenata za let 1 te vježbu 3 i 4

Grafikon 15 ističe da je prosjek pogrešaka pilota vrlo sličan prosjeku pogrešaka kontrole leta u vježbi 4. Studenti kontrole leta su najviše griješili u vježbi 3 zbog toga što su prvi put u toj vježbi imali odlazne i dolazne VFR letove što je zahtijevalo bolje usklađivanje prometa. Blagi napredak se vidi prelaskom na vježbu 4.

#### 6.4. Analiza prema vrsti pogreške

U ovom dijelu su analizirane vrste pogrešaka koje su studenti radili kroz letove i vježbe. Pogreške koje su činili studenti su podijeljene u pet vrsta:

- Jezične pogreške
- Kriva struktura poruke
- Neispravna frazeologija
- Neispravan početni poziv
- Izostavljanje informacija.

Sve pogreške pilota i kontrolora zračnog prometa zasebno su zbrojene te prikazane u postotku. Postotak određene vrste pogreške u odnosu na ukupni broj pogrešaka za pilote je vidljiv u Grafikonu 16.



**Grafikon 16.** Postotak prema vrsti pogrešaka studenata pilota leta 1

Grafikon 16 prikazuje kako je izostavljanje informacija najčešća pogreška kod studenata pilota, zatim slijede kriva struktura poruke, jezične pogreške, neispravna frazeologija, a pogrešku neispravnog početnog poziva su piloti najmanje činili.

Postotak pogrešaka prema vrsti studenata kontrole leta se nalazi u Grafikonu 17. Uočljivo je da studenti kontrole leta imaju duplo manje jezičnih pogrešaka, ali je zato pojava neispravne frazeologije dvaput češća.

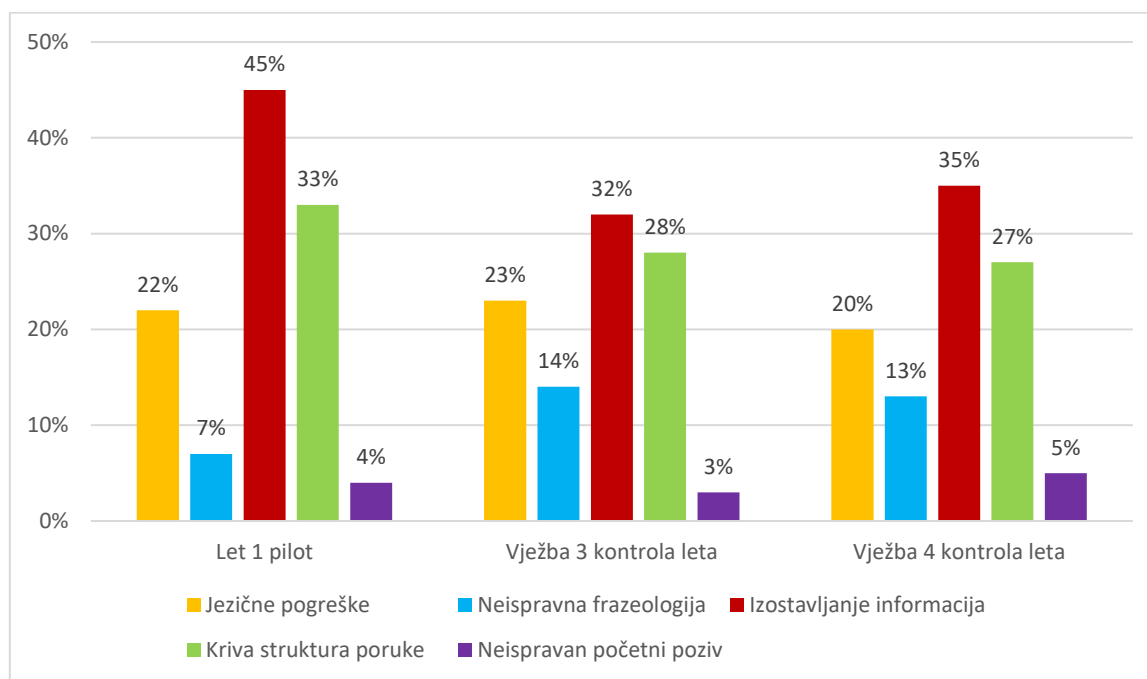


**Grafikon 17.** Postotak prema vrsti pogrešaka studenata kontrole leta vježbe 3 i 4

Grafikon 17 pokazuje da je najčešća pogreška kod studenata kontrole leta izostavljanje informacija. Iza izostavljanja informacija se nalazi kriva struktura poruke, jezične pogreške, neispravna frazeologija te na kraju neispravan početni poziv. Također se može uočiti da se poredak prema učestalosti vrste pogrešaka između studenata pilota i kontrole leta podudara.

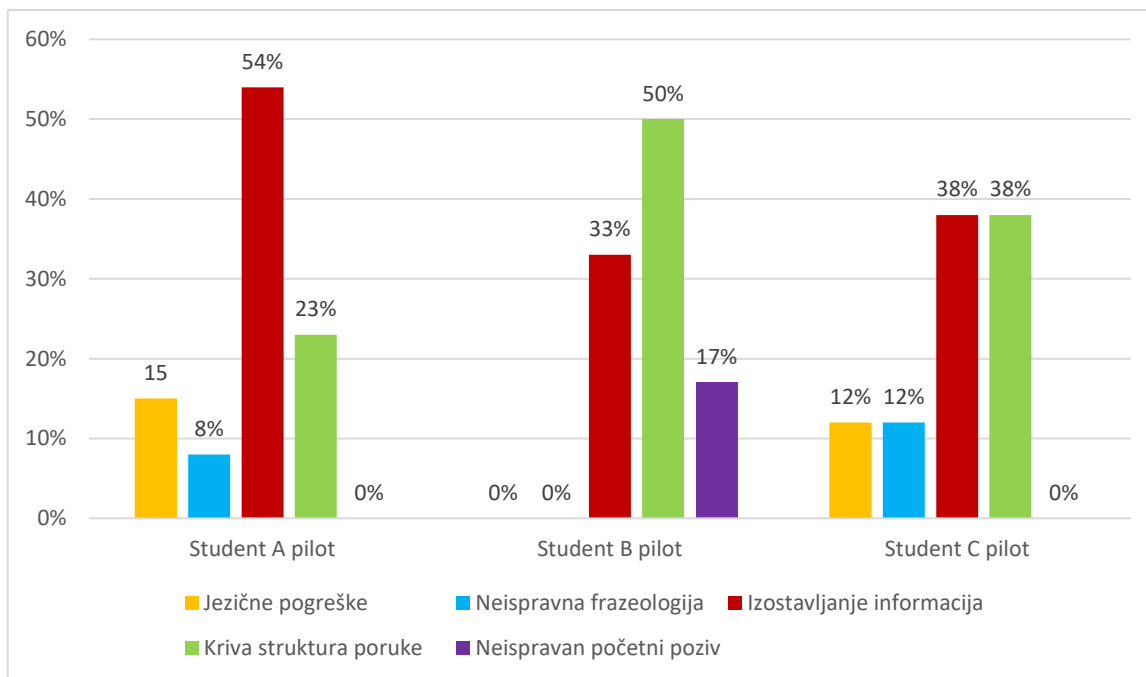
## 6.5. Analiza pogrešaka studenata prema vrsti

U posljednjem dijelu analize su obrađene vrste pogrešaka kod svakog studenta zasebno te su prikazani postotci u kojima se pojavljuju pogreške. Također su analizirane vrste pogrešaka kod vježbe 3, vježbe 4 i leta 1 kako bi se lakše usporedio iznos i vrste pogrešaka pojedinih studenata u vježbi sa ostatkom grupe.



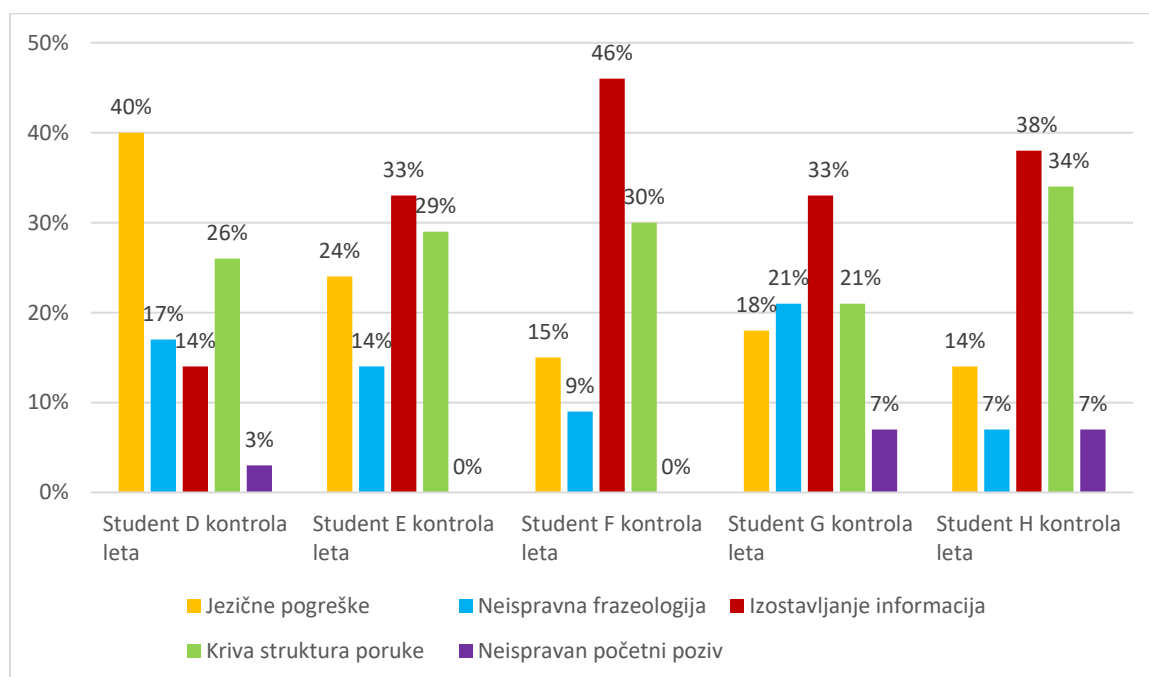
**Grafikon 18.** Postotak pogrešaka studenata prema vrsti vježbe 3, 4 i leta 1

Grafikon 18 pokazuje kako je studentima pilotima najveći problem izostavljanje informacija prilikom prijenosa poruke, dok je kod studenata kontrole leta taj problem manje izražen; međutim, to je i dalje prevladavajuća pogreška. Kriva struktura poruke kod studenata pilota i kontrole leta naglašena je u sličnim razinama. Jezične pogreške su skoro podjednako raspoređene između studenata s minimalnim razlikama u učestalosti. Neispravna frazeologija znatnije prevladava kod studenata kontrole leta naspram studenata pilota. Pogreška neispravnog početnog poziva se rijetko pojavljuje u razgovoru kod obje grupe studenata.



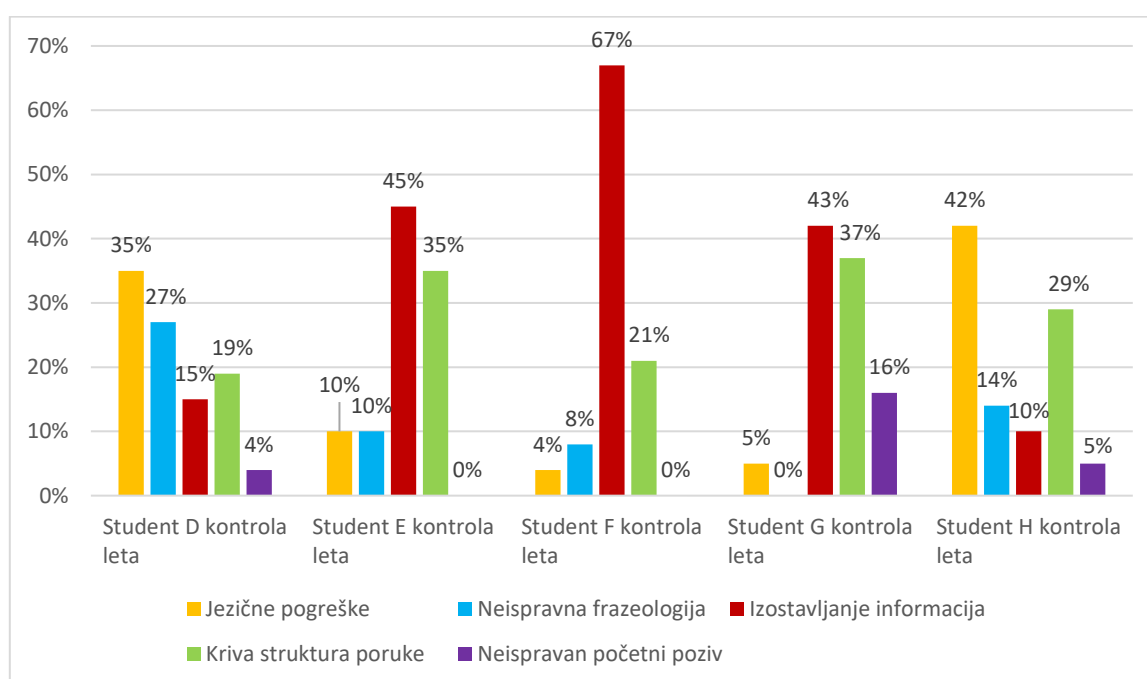
**Grafikon 19.** Postotak pogrešaka prema vrsti svih studenata pilota leta 1

Grafikon 19 pokazuje kako se kod studenata pilota najviše pogreška pojavljuje kod izostavljanja informacija i krive strukture poruke. Student A je imao 13 pogrešaka na letu 1, dok je student B imao šest pogrešaka, a student C je napravio osam pogrešaka. Studenti A i C imaju prisutne pogreške poput jezičnih pogrešaka te neispravne frazeologije, dok te iste pogreške kod studenta B nisu prisutne. Student B je ujedno i jedini student koji je upotrijebio neispravan početni poziv.



**Grafikon 20.** Postotak pogrešaka prema vrsti svih studenata kontrole leta vježbe 3

Grafikon 20 prikazuje da je kod studenata kontrole leta najčešća pogreška u vježbi 3 bila izostavljanje informacija. Student D imao je 42 pogreške te je jedini student čija je najučestalija pogreška jezična pogreška u vježbi 3, što je prouzrokovano zastajkivanjem u govoru. Nadalje, student E je napravio 21 pogrešku u vježbi 3 od čega je pet jezičnih pogrešaka, šest pogrešaka neispravne strukture, tri pogreške neispravne frazeologije te sedam pogrešaka izostavljanja informacija. Student F je imao 33 pogreške od čega je imao značajno povećan broj pogrešaka kod izostavljanja informacija, točnije 15 pogrešaka. Studenti G i H su imali sličnu raspodjelu pogrešaka osim pogreške krive strukture koju je student G napravio sedam puta, a student H deset puta. Student G je napravio 33 pogreške isto kao i student F, a student H je imao 29 pogrešaka u vježbi 3.

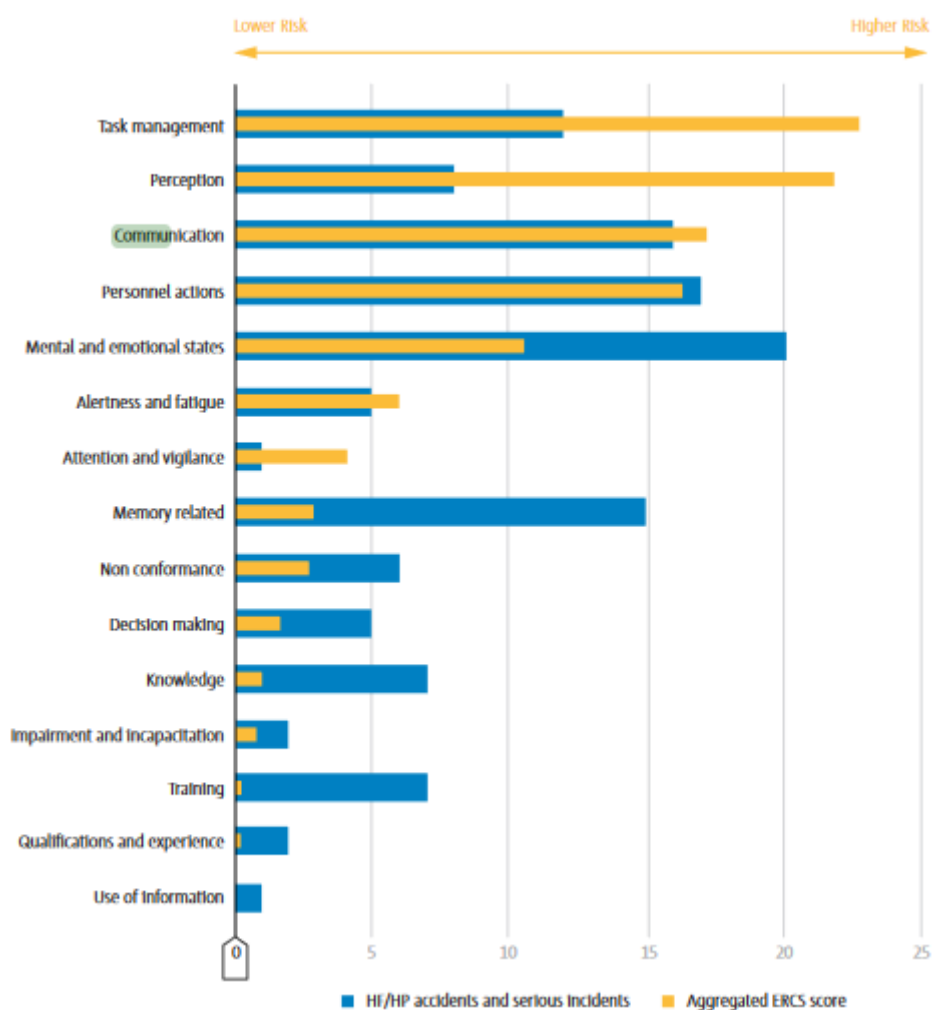


**Grafikon 21.** Postotak pogrešaka prema vrsti svih studenata kontrole leta vježbe 4

Grafikon 21 pokazuje napredak kod većine studenata što se tiče smanjenja pogrešaka i same raspodjele. Student D je u vježbi 4 imao 26 pogrešaka što je znatno manje naspram vježbe 3. Student E je s vježbe 3 na vježbu 4 prešao s 21 pogreške na 20 pogrešaka zbog povećanja pogreške izostavljanja informacija i ostvario minimalan napredak. Student F je napravio 24 pogreške u vježbi 4 te su i dalje prevladavale jezične pogreške. Student G je imao 19 pogrešaka u vježbi 4 te nije imao niti jednu pogrešku prilikom korištenja frazeologije. Student H je imao 21 pogrešku prilikom razgovora u vježbi 4 gdje je više jezičnih pogrešaka naspram vježbe 3, ali je imao manji broj slučajeva gdje je izostavio informaciju prilikom transmisije.

## 6.5. EASA godišnje izvješće o sigurnosti

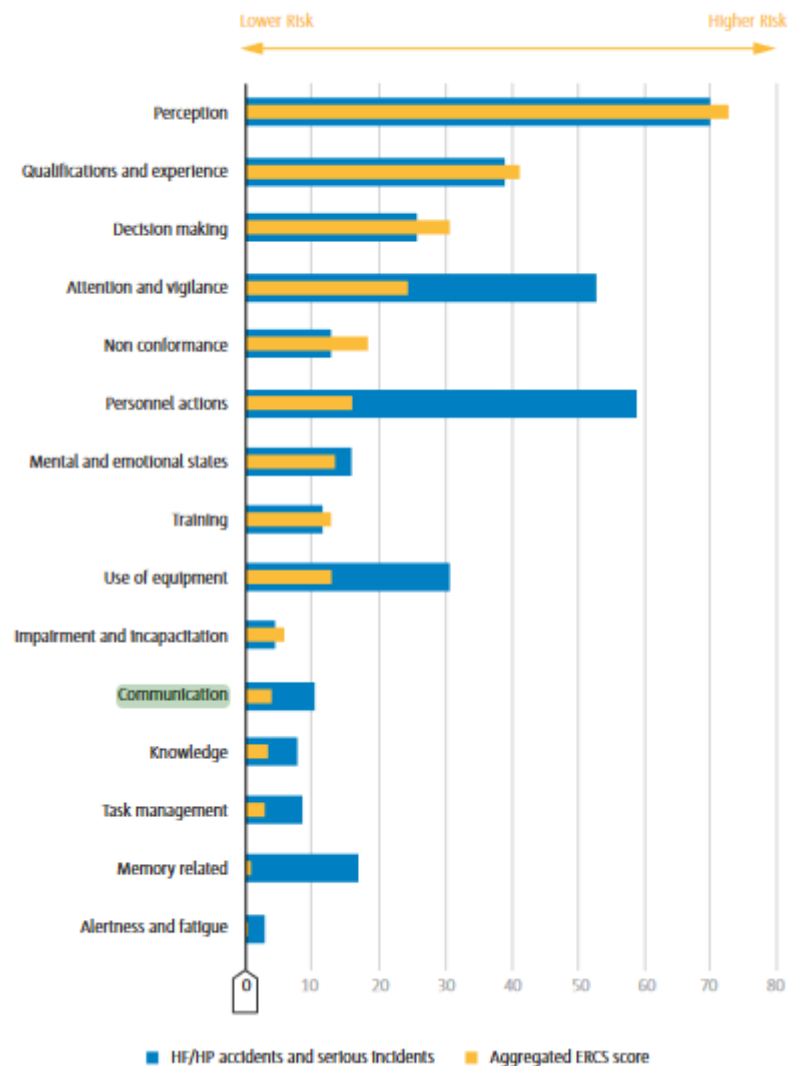
Agencija Europske unije za sigurnost zračnog prometa (*European Union Safety Agency – EASA*) je za 2022. godinu prikupila podatke o sigurnosti zračnog prometa koji služe isključivo u informativne svrhe. U komercijalnom zračnom prometu komunikacija je jedna od pogrešaka uzrokovana ljudskim čimbenikom s velikim brojem nesreća poput sudara zrakoplova u zraku i ozbiljnih incidenata. Žutom bojom je prikazana razina opasnosti od pojedinog tipa pogreške, a plavom bojom je označen broj ozbiljnih incidenata i nesreća koji su nastali zbog navedene pogreške. Na Slici 5 su prikazane vrste pogrešaka te broj nesreća i ozbiljnih incidenata koje uključuju komercijalne zračne prijevoznike i *Air taxi* [11].



**Slika 5.** Vrste pogrešaka i broj nesreća te ozbiljnih incidenata koje uključuju komercijalne zračne prijevoznike i *Air taxi*, [11]

S druge strane, nekomercijalna strana avijacije u malim zrakoplovima je imala za trećinu manji broj nesreća i ozbiljnih incidenata uzrokovan pogreškama u komunikaciji. Za pilote malih zrakoplova manjak iskustva i kvalifikacija je puno veći problem naspram komunikacije s kontrolom zračnog prometa. Na Slici 6 su prikazane vrste pogrešaka i broj nesreća te ozbiljnih

incidenata koje uključuju male zrakoplove u nekomercijalnim operacijama. Izvješće EASA-e pokazuje koliko ozbiljno se mora shvatiti uloga kontrolora zračnog prometa kako bi se izbjegle pogreške u komunikaciji i time smanjio broj nesreća. Dakle, vidljivo je kako studentima kontrole zračnog prometa nedostaje vježbe na simulatoru kako bi u konačnici mogli zadovoljiti vrline i zahtjeve komercijalnog kontrolora zračnog prometa koji osigurava potrebnu razinu sigurnosti u zračnom prometu. [11].



**Slika 6.** Vrste pogrešaka i broj nesreća te ozbiljnih incidenata koje uključuju male zrakoplove u nekomercijalnim operacijama, [11]



## 7. ZAKLJUČAK

Prilikom vođenja komunikacije između pilota i kontrolora zračnog prometa, poznavanje standardne frazeologije je ključno zbog toga što osigurava učinkovitu i jezgrovitu komunikaciju. Samim time se smanjuje mogućnost nerazumijevanja zbog potencijalnih razlika u materinskom jeziku te povećava sigurnost u avijaciji. Za svakog sudionika zračnog prometa važno je zadovoljiti razinu 4 poznavanja engleskog jezika kako bi se mogao snaći u situacijama gdje standardna frazeologija možda nije propisana.

Cilj ovog završnog rada bio je utvrditi pogreške studenata usmjerenja kontrola leta na aerodromskom simulatoru te studenata pilota prilikom provođenja trenažnih letova. Analizirane su dvije vježbe za pet studenata kontrole leta te jedan let za tri studenta pilota. Pogreške koje su studenti činili bile su u rasponu od manjih pogrešaka poput jezičnih pogrešaka do ozbiljnih pogrešaka poput krivih instrukcija. Narušavanje sigurnosti ostalog prometa predstavlja ugrozu narušavanja pravila prilikom razdvajanja prometa. Između vježbi vidljiv je napredak kod svakog studenta kontrole zračnog prometa. Najveći broj pogrešaka pojavio se u obliku izostavljanja informacija uz česte nepotpune informacije koje su studenti ujedno zaboravili ispraviti. Nadalje, konstrukcija rečenice je uočavajući problem s kojim su se studenti susretali kada bi krivim redoslijedom izdavali odobrenja za polijetanje i slijetanje. Kod studenata pilota najučestalija pogreška je bila izostavljanje informacija te pogreška krive strukture, jednako kao i kod studenata kontrole zračnog prometa. Pogreške u frazeologiji i jezične pogreške su bile prisutne, ali su bile rjeđe zastupljene u razgovorima. Pogreška krivog početnog poziva se je povremeno pojavljivala prilikom vježbi na simulatoru i trenažnih letova.

Kako bi se povećala razina sigurnosti u avijaciji te podigao standard u komunikaciji, potrebno je osvijestiti studente o važnosti učinkovite komunikacije te korištenja standardne frazeologije. Prije svakog leta ili vježbe na simulatoru je ključno za studenta da ponovi komunikaciju za najčešće situacije u kojima će se pronaći prilikom vježbe. Za smanjenje broja pogrešaka u komunikaciji potrebna je potpuna koncentracija studenta prilikom svakog leta ili vježbe.

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## POPIS KRATICA

RTF (Radiotelephony) radiotelefonija

ICAO (International Civil Aviation Organization) Međunarodna agencija za civilno zrakoplovstvo

CPDLC (*Controller-pilot data link Communications*) Komunikacija putem podatkovne veze kontrolor-pilot

ATC (*Air traffic control*) kontrola zračnog prometa

CTR (*Control zone*) kontrolirana zona

VFR (Visual flight rules) vizualna pravila letenja

IFR (Instrument flight rules) instrumentalna pravila letenja

EASA (*European Union Safety Agency*) Agencija Europske unije za sigurnost zračnog prometa

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## Prilog 1. Transkript razgovora studenata kontrole leta

U navedenom prilogu nalaze se svi transkripti razgovora studenata kontrole zračnog prometa u simuliranom aerodromskom zračnom prostoru. Slovom P označene su transmisije pilota, a slovom C studenta kontrole zračnog prometa. Vježba se sastoji od pet studenata (studenti D-H) koji su odradili dvije vježbe (vježba 3 i 4). Netočni dijelovi rečenice su označeni s crvenom bojom te su ispravljani i prikazani zelenom bojom ispod razgovora. Ispravni razgovori između studenta kontrole leta i pilota su samo transkribirani.

### VJEŽBA 3.

#### STUDENT D:

##### RAZGOVOR 1:

P: Zagreb Tower, 9ADVJ, S1 point, 2000ft.

C: 9ADVJ, Zagreb Tower, proceed to S2 point, RWY 05, altitude 2000ft, QNH 1019, WIND 080/13KT.

P: To proceed to S2 point, RWY in use 05, QNH 1019, 9ADVJ.

C: 9ADVJ, correct.

Ispravak:

C: 9ADVJ, Zagreb Tower, proceed to S2 point, RWY in use 05, altitude 2000ft, WIND 080/13KT, QNH 1019.

##### RAZGOVOR 2:

P: Zagreb tower, 9AJFS, VFR training flight for aerodrome traffic circuits, request taxi instructions.

C: 9AJFS, Zagreb tower, taxi via taxiway A to holding point RWY 05, QNH 1019, WIND 080/13KT.

P: To Taxi Via Taxiway A to holding point RWY 05, QNH 1019, 9AJFS.

C: 9AJFS, CORRECT.

Ispravak:

C: 9AJFS, Zagreb tower, taxi via taxiway A to holding point RWY 05, WIND 080/13kt, QNH 1019.

##### RAZGOVOR 3:

C: 9AJFS, ready to copy ATC clearance.

P: 9AJFS, ready.

C: 9AJFS, am, cleared for VFR training flight, left hand traffic circuit, am, altitude 1500ft, squawk 0001.

P: cleared VFR training flight, when airborne to turn left, altitude 1500ft, SQUAWK 0001, 9A-JFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, cleared VFR training flight, **left hand traffic circuit RWY 05**, altitude 1500 ft, SQUAWK 0001.

RAZGOVOR 4:

P: 9AJFS, holding point RWY 05.

C: 9AJFS, roger, are you ready for departure.

P: 9AJFS, ready.

C: 9AJFS, **am, cleared for takeoff, RWY 05**, wind 080/13kt.

P: **cleared for takeoff, RWY 05**, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, **RWY 05, cleared for takeoff**, wind 080/13kt.

P: **RWY 05, cleared for takeoff**, 9AJFS.

RAZGOVOR 5:

P: 9AJFS, airborne at 15, turning left to join left hand downwind RWY 05.

C: 9AJFS, **roger, report downwind RWY 05**.

P: 9AJFS, roger, correction, wilco.

Ispravak:

C: 9AJFS, roger, report **left hand** downwind RWY 05.

RAZGOVOR 6:

P: Zagreb Tower, 9ATAD, inbound N1 point, altitude 2000ft.

C: 9ATAD, **am**, Zagreb tower, proceed to N3 point, altitude 2000ft, **RWY 05, QNH 1019, wind 080/13kt**.

P: to proceed to N3 point, altitude 2000ft, RWY 05, QNH 1019, 9ATAD.

C: 9E, **am**, 9ATAD, correct.

Ispravak:

C: 9ATAD, Zagreb tower, proceed to N3 point, altitude 2000ft, **RWY in use 05, wind 080/13kt, QNH 1019**.

P: to proceed to N3 point, altitude 2000ft, RWY in use 05, QNH 1019, 9ATAD.

C: **9ATAD, correct**.

RAZGOVOR 7:

P: Zagreb tower, 9AJUT, VFR flight to Osijek, request taxi instructions.

C: 9AJUT, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.



P: to taxi via taxiway A to holding point RWY 05, RWY in use 05, QNH 1019, 9AJUT.

C: 9AJUT, correct.

RAZGOVOR 8:

P: 9AJFS, at downwind RWY 05.

C: 9AJFS, continue approach, **report final**.

P: 9AJFS, wilco.

Ispravak:

C: 9AJFS, continue approach, report final **RWY 05**.

RAZGOVOR 9:

C: 9AJUT, are you ready to copy ATC clearance.

P: 9AJUT, ready.

C: 9AJUT, cleared VFR flight to Osijek, when airborne turn right, proceed to E2 point, altitude 2000ft, squawk 0010.

P: cleared VFR flight to Osijek, when airborne to turn right, to proceed to E3 point, correction, E2 point, altitude 3000ft, squawk 0010, 9AJUT.

C: 9AJUT, **correct**.

Ispravak:

C: 9AJUT, **negative I say again**, cleared VFR flight to Osijek, when airborne turn right, proceed to E2 point, altitude 2000ft, squawk 0010.

P: cleared VFR flight to Osijek, when airborne to turn right, to proceed to E3 point, correction, E2 point, altitude 2000ft, squawk 0010, 9AJUT.

C: 9AJUT, **correct**.

RAZGOVOR 10:

P: 9ADVJ, at S2 point.

C: 9ADVJ, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 11:

C: 9AJFS, **am, cleared for touch and go RWY 05**, wind 080/13kt.

P: **cleared for touch and go RWY 05**, 9AJFS.

C: 9AJFS, correct, after touch and go, turn left, join left hand traffic circuit RWY 05.

P: after touch and go to turn left, to join left hand traffic circuit RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AJFS.

RAZGOVOR 12:

P: 9AJUT, at holding point RWY 05.

C: 9AJUT, roger, traffic is , am, C172 on final RWY 05, report traffic in sight.

P: 9AJUT, traffic in sight.

C: 9AJUT, am, behind C172 line up behind.

P: behind C172 to line up behind, 9AJUT.

C: 9AJUT, correct.

RAZGOVOR 13:

P: 9ADVJ, request joining instructions.

C: Station calling, Zagreb tower, say again.

P: 9ADVJ, request joining instructions, for landing.

C: 9ADVJ, make one orbit to the, am, left at present position.

P: making one orbit to the right, 9ADVJ.

C: 9ADVJ, correct.

Ispravak:

C: 9ADVJ, make one orbit to the left from present position.

P: making one orbit to the right, 9ADVJ.

C: 9ADVJ, negative I say again, make one orbit to the left from present position.

P: making one orbit to the left, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 14:

P: 9AJFS, touch and go completed, turning left to join left hand downwind RWY 05.

C: 9AJFS, roger.

RAZGOVOR 15:

C: 9AJUT, are you ready for departure.

P: 9AJ, correction, 9ADVJ, orbit completed.

C: 9ADVJ, report final, continue approach, report final.

P: 9ADVJ, final RWY 05.

C: 9ADVJ, roger.

Ispravak:

C: 9ADVJ, report final, correction, continue approach, report final.

P: 9ADVJ, final RWY 05.

C: 9ADVJ, roger.

RAZGOVOR 16:

C: 9AJUT, cleared for takeoff, RWY 05, wind 080/13kt.

P: cleared for takeoff, RWY 05, 9AJUT.

C: 9AJUT, correct.

Ispravak:

C: 9AJUT, RWY 05, cleared for takeoff, wind 080/13kt.

P: RWY 05, cleared for takeoff, 9AJUT.

C: 9AJUT, correct.

RAZGOVOR 17:

C: 9ADVJ, traffic is, 9A, traffic is C172, just departed RWY 05.

P: 9ADVJ, traffic in sight.

C: 9ADJV, correct.

Ispravak:

C: 9ADVJ, traffic is C172, just departed RWY 05, report traffic in sight.

P: 9ADVJ, traffic in sight.

C: 9ADJV, roger.

RAZGOVOR 18:

P: 9AJUT, airborne at 23.

C: 9AJUT, roger, report passing 2000 ft.

P: 9AJUT, wilco.

RAZGOVOR 19:

C: 9ADVJ, am, cleared to land RWY 05, wind 080/13kt.

P: cleared to land RWY 05, 9ADVJ.

C: 9ADVJ, correct.

Ispravak:

C: 9ADVJ, RWY 05, cleared to land, wind 080/13kt.

P: cleared to land RWY 05, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 20:

P: 9AJFS, downwind RWY 05.

C: Station calling, Zagreb tower, say again.

P: 9AJFS, at left hand downwind RWY 05.

C: 9AJFS, continue approach, report final RWY 05.

P: 9AJFS, wilco.

RAZGOVOR 21:

C: 9AJFS, traffic is am, C172, landing on RWY 05, report traffic in sight.

P: 9AJFS, traffic in sight.

C: 9AJFS, number 2, follow C172, am, report final.

P: number 2, to follow C172, wilco, 9AJFS.

RAZGOVOR 22:

P: 9ADVJ, landed at 25, request taxi instructions.

C: 9ADVJ, roger, vacate the RWY via taxiway C, taxi to the apron via taxiway F, report RWY vacated.

P: vacate the RWY via taxiway C and F to the apron, wilco, 9ADVJ.

C: 9ADVJ, correct.

P: 9ADVJ, RWY vacated.

C: 9ADVJ, roger.

RAZGOVOR 23:

C: 9AJFS, cleared for touch and go landing RWY 05, wind 080/13kt.

P: cleared for touch and go RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 24:

P: 9AJUT, passing 2000ft.

C: 9AJUT, contact Zagreb radar on 120.7.

P: 120.7, 9AJUT.

C: 9AJUT, correct.

RAZGOVOR 25:

P: Zagreb tower, 9ACVN, VFR flight to Sinj, request taxi instructions.

C: 9ACVN, Zagreb tower, taxi via taxiway A to a holding point RWY 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ACVN.

C: 9ACVN, correct.

Ispravak:

C: 9ACVN, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 26:

P: 9ACVN, ready to copy ATC clearance.

C: 9ACVN, cleared VFR flight to Sinj, when airborne, turn right, proceed to S1 point, altitude 2500ft, squawk 0015.

P: cleared VFR flight to Sinj, when airborne to turn right to proceed to S1 point, altitude 2500ft, squawk 0015, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 27:

P: 9ATAD, N3 point.

C: 9ATAD, am, traffic is C172, just departed RWY 05, report traffic in sight.

P: 9ATAD, traffic in sight.

C: 9ATAD, roger, join left hand downwind RWY 05.

P: joining left hand downwind RWY 05, 9ATAD.

C: 9ATAD, correction, join left hand downwind as number 2, am, follow C172.

P: 9ATAD, to join left hand downwind as number 2, wilco, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 28:

P: 9ACVN, holding point RWY 05.

C: 9ACVN, cleared for takeoff RWY 05, wind 080/13kt.

P: cleared for takeoff RWY 05, 9ACVN.

C: 9ACVN, correct.

Ispravak:

C: 9ACVN, RWY 05, cleared for takeoff, wind 080/13kt.

P: RWY 05, cleared for takeoff, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 29:

P: 9AJFS, downwind RWY 05.

C: 9AJFS, continue approach, traffic is, am, traffic is piper 18, just departed RWY 05, report traffic in sight.

P: 9AJFS, wilco.

C: 9AJFS, continue approach, report final.

P: Continuing approach, wilco, 9AJFS.

RAZGOVOR 30:

P: 9ACVN, airborne at 30, turning right to proceed to S1 point.

C: 9ACVN, roger, report passing 2000ft.

P: 9ACVN, wilco.

RAZGOVOR 31:

C: 9AJFS, cleared to land RWY 05, wind 080/13kt.

P: cleared to land RWY 05, 9AJFS.

C: 9AJFS, recleared for touch and go RWY 05, wind 080/13kt.

P: recleared for touch and go RWY 05, 9AJFS.

C: 9AJFS, am, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared to land, wind 080/13kt.

P: RWY 05, cleared to land, 9AJFS.

RAZGOVOR 32:

C: 9ATAD, traffic is, am, C172, landing RWY 05, report traffic in sight.

P: 9ATAD, traffic in sight.

C: 9ATAD, number 2, follow C172, report final RWY 05.

P: number 2, to follow C172, wilco, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 33:

P: 9AJFS, touch and go completed, turning left to join left hand downwind RWY 05.

C: 9AJFS, roger.

RAZGOVOR 34:

P: 9ACVN, passing 2500ft.

C: 9ACVN, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 35:

P: 9ATAD, final RWY 05.

C: 9ATAD, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, 9ATAD.

C: 9A, correction, 9ATAD, correct.

Ispravak:

P: 9ATAD, final RWY 05.

C: 9ATAD, **RWY 05, cleared to land**, wind 080/13kt.

P: **RWY 05, cleared to land**, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 36:

P: 9AJFS, left hand downwind RWY 05.

C: 9AJFS, continue approach, report final.

P: 9AJFS, wilco.

RAZGOVOR 37:

P: 9ATAD, landed at 35, request taxi instructions.

C: 9ATAD, vacate the RWY via taxiway C, taxi via taxiway F to the apron, report RWY vacated.

P: to vacate the RWY via taxiway C and F to the apron, wilco, 9ATAD.

C: 9ATAD, **roger**, correct.

P: 9ATAD, RWY vacated.

C: 9ATAD, roger.

Ispravak:

P: to vacate the RWY via taxiway C and F to the apron, wilco, 9ATAD.

C: 9ATAD, correct.

#### RAZGOVOR 38:

C: 9AJFS, cleared for touch and go RWY 05, wind 080/13kt.

P: cleared for touch and go RWY 05, 9AJFS.

C: 9AJFS, correct.

C: 9JFS, after touch and go turn left, join left hand traffic circuit RWY 05.

P: after touch and go to turn left, to join left hand traffic circuit RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AJFS.

C: 9AJFS, correct.

## **STUDENT E:**

#### RAZGOVOR 1:

P: Zagreb tower, 9ADVJ, inbound S1, maintaining altitude 2000ft.

C: 9ADVJ, Zagreb tower, proceed to S2 point, maintain 2000ft, RWY in use 05, wind 080/7kt, QNH 1016.

P: to proceed to S2 point, maintaining altitude 2000ft, RWY in use 05, QNH 1016, 9ADVJ.

C: 9ADVJ, correct.

#### RAZGOVOR 2:

P: Zagreb tower, 9AJFS, VFR training flight, request taxi instructions.

C: 9AJFS, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/7kt, QNH 1016.

P: to taxi via taxiway A to holding point RWY 05, QNH 1016, 9AJFS.

C: 9AJFS, correct, are you ready to copy ATC clearance.

P: 9AJFS, ready to copy ATC clearance.



C: 9AJFS, cleared VFR training flight, when airborne turn left, join left hand downwind RWY 05, altitude 1500ft, SQUAWK 0001.

P: when airborne to turn left to join left hand downwind RWY 05, altitude 1500ft, SQUAWK 0001, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 3:

P: 9AJFS, at holding point RWY 05.

C: 9AJFS, cleared for takeoff RWY 05, wind 080/7kt.

P: cleared for takeoff RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for takeoff, wind 080/7kt.

P: RWY 05, cleared for takeoff, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 4:

P: Zagreb tower, 9ATAD, inbound N1, maintaining altitude 2000ft.

C: 9ATAD, Zagreb tower, proceed to N3 point, altitude 2000ft, RWY in use 05, wind 080/7kt, QNH 1016.

P: to proceed to N3, maintain altitude 2000ft, RWY in use 05, QNH 1017, 9ATAD.

C: 9ATAD, negative, QNH 1016.

P: QNH 1016, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 5:

P: 9AJFS, airborne, turning left to join left hand downwind RWY 05.

C: 9AJFS, roger, report downwind.

P: 9AJFS, wilco.

Ispravak:

P: 9AJFS, airborne, turning left to join left hand downwind RWY 05.

C: 9AJFS, roger, report left hand downwind RWY 05.

P: 9AJFS, wilco.

RAZGOVOR 6:

P: Zagreb tower, 9AJUT, general aviation apron, request taxi instructions for VFR flight.

C: 9AJUT, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/7kt, QNH 1016.

P: to taxi via taxiway A to holding point RWY 05, QNH 1016, 9AJUT.

C: 9AJUT, correct.

RAZGOVOR 7:

P: 9AJFS, on left hand downwind RWY 05.

C: 9AJFS, roger, continue approach, report final.

P: 9AJU, correction, 9AJFS, wilco.

RAZGOVOR 8:

P: 9ADVJ, inbound S2 point, altitude 2000ft.

C: 9ADVJ, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, 9ADVJ.

C: 9ADVJ, correct, traffic is C172 on left hand downwind RWY 05, turning base, report traffic in sight.

P: 9ADVJ, looking out.

P: 9ADVJ, traffic in sight.

C: 9ADVJ, roger, follow, am, number 2, follow C172, am, report final.

P: am, correction, number 2, to follow C172, wilco, 9ADVJ.

C: 9ADVJ, correct.

Ispravak:

C: 9ADVJ, roger, follow, correction, number 2, follow C172, report final RWY 05.

P: number 2, to follow C172, wilco, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 9:

C: 9AJFS, after touch and go turn left, joining left hand downwind RWY 05, altitude 1500ft.

P: after touch and go to turn left, to join left hand downwind, altitude 1500ft, 9AJFS.

P: 9AJFS, on final RWY 05.

C: 9AJFS, cleared for touch and go RWY 05, wind 080/7kt.

P: cleared for touch and go RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for touch and go, wind 080/7kt.

P: RWY 05, cleared for touch and go, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 10:

P: Zagreb, am, correction, 9AJUT, ready to copy ATC clearance.

C: 9AJUT, cleared to Osijek via flight planned route, when airborne turn right, proceed to S2 point, altitude 3000ft, am, SQUAWK 0010.

P: cleared VFR flight to Osijek, when airborne to turn right, to proceed to S2 point, at altitude 3000ft, SQUAWK 0100, 9AJUT.

C: 9AJUT, negative, SQUAWK 0010.

P: SQUAWK 0010, 9AJUT.

C: 9AJUT, correct.

Ispravak:

C: 9AJUT, cleared VFR flight to Osijek via flight planned route, when airborne turn right, proceed to S2 point, altitude 3000ft, am, SQUAWK 0010.

P: cleared VFR flight to Osijek via flight planned route, when airborne to turn right, to proceed to S2 point, altitude 3000ft, SQUAWK.

RAZGOVOR 11:

P: 9AJUT, at holding point RWY 05.

C: 9AJUT, roger.

RAZGOVOR 12:

P: 9AJFS, turning left to join left hand downwind RWY 05.

C: 9AJFS, roger, report downwind.

Ispravak:

P: 9AJFS, turning left to join left hand downwind RWY 05.

C: 9AJFS, roger, report left hand downwind RWY 05.

RAZGOVOR 13:

C: 9AJUT, traffic is C172 on short final RWY 05, report traffic in sight.

P: 9AJUT, traffic in sight.

C: 9AJUT, roger, behind C172 line up behind.

P: 9AJUT, on final RWY 05.

C: 9AJUT, correct.

Ispravak:

C: 9AJUT, roger, behind C172 line up behind.

P: 9AJUT, behind C172 to line up behind.

C: 9AJUT, correct.

RAZGOVOR 14:

P: 9ADVJ, on final RWY 05.

C: 9ADVJ, roger, cleared to land RWY 05, wind 080/7kt.

P: cleared to land RWY 05, 9ADVJ.

C: 9ADVJ, correct.

Ispravak:

C: 9ADVJ, roger, RWY 05, cleared to land, wind 080/7kt.

P: RWY 05, cleared to land, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 15:

P: 9ADVJ, landed at 22.

C: 9ADVJ, roger, vacate the RWY via taxiway D, report RWY vacated.

P: to vacate the RWY via taxiway D, wilco, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 16:

P: 9AJFS, on left hand downwind RWY 05.

C: 9AJFS, roger, continue approach, report final/

P: to continue approach, wilco, 9AJFS.

RAZGOVOR 17:

P: 9ADVJ, RWY vacated.

C: 9AJFS, roger, taxi via F to the apron.

P: to taxi via taxiway F to the apron, 9AJFS.

C: 9AJFS, correct, break break, 9AJUT, cleared for takeoff RWY 05, wind 080/7kt.

P: cleared for takeoff RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, correct, break break, 9AJUT, RWY 05 cleared for takeoff, wind 080/7kt.

P: RWY 05 cleared for takeoff, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 18:

C: 9AJFS, after touch and go turn left, join left hand downwind RWY 05.

P: after touch and go to turn left, to join left hand downwind RWY 05, 9AJFS.

RAZGOVOR 19:

P: 9AJUT, airborne at 23, turning right, proceeding to S2 point.

C: 9AJUT, roger, report passing 2000ft.

P: 9AJUT, wilco.

RAZGOVOR 20:

P: 9AJFS, on final RWY 05.

C: 9AJFS, **cleared for touch and go RWY 05**, wind 080/7kt.

P: **cleared for touch and go RWY 05**, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, **RWY 05, cleared for touch and go**, wind 080/7kt.

P: **RWY 05, cleared for touch and go**, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 21:

P: Zagreb tower, 9ACVN, general aviation apron, am, request taxi instructions for VFR flight.

C: 9ACVN, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/7kt, QNH 1016.

P: to taxi via taxiway A to holding point RWY 05, QNH 1016, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 22:

P: 9ATAD, inbound N3 point, altitude 2000ft.

C: 9ATAD, roger, joining left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9ATAD.

RAZGOVOR 23:

P: 9AJUT, passing 2000ft.

C: 9AJUT, roger, contact Zagreb radar on 120.7.

P: 120.7, 9AJUT, bye bye.

C: 9AJUT, correct, break break, 9AJFS, **traffic is C172 joining left hand downwind RWY 05, altitude 1500ft.**

P: 9AJFS, looking out.

Ispravak:

C: 9AJUT, correct, break break, 9AJFS, traffic is C172 joining left hand downwind RWY 05, altitude 1500ft, **report traffic in sight**.

P: 9AJFS, looking out.

RAZGOVOR 24:

C: 9ATAD, traffic is C172 just departed RWY 05, joining left hand downwind RWY 05.

P: 9ATAD, traffic in sight.

P: 9AJFS, traffic in sight.

C: 9AJFS, roger, number 2, follow C172, report downwind.

P: number, to follow C172, wilco, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 25:

P: 9ACVN, ready to copy ATC clearance.

C: 9ACVN, standby.

RAZGOVOR 26:

C: 9ATAD, **cleared to land RWY 05**, wind 080/7kt.

P: **cleared to land RWY 05**, 9ATAD.

Ispravak:

C: 9ATAD, **RWY 05, cleared to land**, wind 080/7kt.

P: **RWY 05, cleared to land**, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 27:

C: 9ATAD, RWY 05, cleared to land, wind 080/7kt.

P: RWY 05, cleared to land, 9ATAD.

C: 9ATAD, correct, break break, 9ACVN, **cleared to Sinj via flight planned route**, when airborne turn right, proceed to S2 point, altitude 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right, to proceed to S2 point, altitude 2500ft, SQUAWK 0015, 9ACVN.

C: 9ACVN, correct.

Ispravak:

C: 9ATAD, correct, break break, 9ACVN, cleared **VFR flight** to Sinj via flight planned route, when airborne turn right, proceed to S2 point, altitude 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj via flight planned route, when airborne to turn right, to proceed to S2 point, altitude 2500ft, SQUAWK 0015, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 28:

C: 9AJFS, after touch and go turn left, join left hand downwind RWY 05.

P: after touch and go to turn left, to join left hand downwind RWY 05, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 29:

P: 9ACVN, at holding point RWY 05.

C: 9ACVN, am, traffic is, disregard, roger.

Ispravak:

P: 9ACVN, at holding point RWY 05.

C: 9ACVN, traffic is, correction, disregard.

RAZGOVOR 30:

C: 9AJFS, extend downwind.

P: to extend left hand downwind, 9AJFS.

C: 9AJFS, correct, break break, 9ACVN, traffic is, am, C172 on short final RWY 05, report traffic in sight.

P: 9ACVN, traffic in sight.

C: 9ACVN, roger, behind C172 to line up behind.

P: behind C172 to line up behind.

RAZGOVOR 31:

P: 9ATAD, landed at 29.

C: 9ATAD, roger, vacate the RWY via taxiway D, report RWY vacated.

P: to vacate the RWY via taxiway D, wilco, 9ATAD.

Ispravak:

P: to vacate the RWY via taxiway D, wilco, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 32:

C: 9AJFS, continue approach, report final.

P: to continue approach, wilco, 9AJFS.

RAZGOVOR 33:

P: 9ATAD, RWY vacated.

C: 9ATAD, roger, taxi via taxiway F to the apron.

RAZGOVOR 34:

P: 9ACVN, lined up RWY 05.

C: 9ACVN, cleared for takeoff RWY 05, wind 080/7kt

P: cleared for takeoff RWY 05, 9ACVN.

C: 9ACVN, correct.

Ispravak:

C: 9ACVN, RWY 05, cleared for takeoff, wind 080/7kt.

P: RWY 05, cleared for takeoff, 9ACVN.

C: 9ACVN, correct.

## STUDENT F:

RAZGOVOR 1:

P: Zagreb tower, 9AHDG, on general aviation apron, request taxi instructions.

C: 9AHDG, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 120/6kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 2:

P: Zagreb tower, 9AFTG, inbound S1, maintaining 2000ft.

C: 9AFTG, Zagreb tower, proceed to S2 point, QNH 0, am, correction, RWY 05, wind 120/6kt, QNH 1019.

P: to proceed to S2, RWY in use 05, QNH 1019, 9AFTG.

C: 9AFTG, correct.

Ispravak:

C: 9AFTG, Zagreb tower, proceed to S2 point, RWY in use 05, wind 120/6kt, QNH 1019.

P: to proceed to S2, RWY in use 05, QNH 1019, 9AFTG.

C: 9AFTG, correct.

RAZGOVOR 3:



C: 9AHDG, are you ready to copy ATC clearance?

P: 9AHDG, affirm.

C: 9AHDG, cleared VFR training flight, **left hand circuit, am**, when airborne join left hand downwind, SQUAWK 0001.

P: cleared VFR training flight, when airborne to turn left to join left hand downwind RWY 05, 1500ft, SQUAWK 0001, 9AHDG.

C: 9AHDG, correct.

Ispravak:

C: 9AHDG, cleared VFR training flight, **when airborne turn left to join left hand downwind RWY 05, altitude 1500ft**, SQUAWK 0001.

P: cleared VFR training flight, when airborne to turn left to join left hand downwind RWY 05, 1500ft, SQUAWK 0001, 9AHDG.

C: 9AHDG, correct.

#### RAZGOVOR 4:

C: 9AFTG, maintain 2000ft.

P: maintaining 2000ft, 9AFTG.

#### RAZGOVOR 5:

P: 9AHDG, at holding point RWY 05.

C: 9AHDG, **cleared for takeoff RWY 05**, wind 120/6kt

P: **cleared for takeoff RWY 05**, 9AHDG.

Ispravak:

C: 9AHDG, **RWY 05, cleared for takeoff**, wind 120/6kt

P: **RWY 05, cleared for takeoff**, 9AHDG.

C: 9AHDG, correct.

#### RAZGOVOR 6:

P: 9AHDG, airborne, turning left, proceeding to left hand downwind RWY 05.

C: 9AHDG, roger.

#### RAZGOVOR 7:

P: Zagreb tower, 9AVBC, inbound N1, maintaining 2000ft.

C: 9AVBC, Zagreb tower proceed to N3 point, maintain 2000ft, RWY in use 05, wind 120/6kt, QNH 1019.

P: to proceed to N3 point, maintaining 2000 QNH 1019, 9AVBC.

RAZGOVOR 8:

P: Zagreb tower, 9ADEG, general aviation apron, request taxi instructions.

C: 9ADEG, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 120/6kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1018, 9ADEG.

C: 9ADEG, negative, QNH 1019.

P: QNH 1019, 9ADEG.

C: 9ADEG, correct, report ready to copy ATC clearance.

P: 9ADEG, wilco.

RAZGOVOR 9:

P: 9AHDG, left hand downwind RWY 05.

C: 9AHDG, continue approach, report final RWY 05.

P: 9AHDG, wilco.

RAZGOVOR 10:

P: 9ADEG, ready to copy ATC clearance.

C: 9ADEG, cleared VFR flight to Osijek, when airborne turn right, proceed to S2 point, altitude 3000ft, SQUAWK 0010.

P: cleared VFR flight to Osijek, when airborne to turn right, to proceed to S2, altitude 3000ft, SQUAWK 0010, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 11:

C: 9AHDG, after touch and go turn left, **join left hand downwind**.

P: after touch and go to turn left to join left hand downwind RWY 05, 9AHDG.

C: 9AHDG, correct.

Ispravak:

C: 9AHDG, after touch and go turn left, **join left hand downwind RWY 05**.

P: after touch and go to turn left to join left hand downwind RWY 05, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 12:

P: 9AHDG, final RWY 05.

C: 9AHDG, **cleared to land RWY**, correction, **cleared for touch and go RWY 05**, wind 120/6kt.

P: **cleared for touch and go RWY 05**, 9AHDG.

Ispravak:

C: 9AHDG, RWY 05, cleared for touch and go, wind 120/6kt.

P: RWY 05, cleared for touch and go, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 13:

P: 9AFTG, inbound S2.

C: 9AFTG, roger, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, 9AFTG.

RAZGOVOR 14:

P: 9ADEG, at holding point RWY 05.

C: 9ADEG, roger, traffic is C172 on final RWY 05, report traffic in sight.

P: 9ADEG, traffic in sight.

C: 9ADEG, am, behind landing C172 line up behind.

P: behind landing C172 to line up behind, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 15:

P: 9AHDG, touch and go completed, turning left, joining left hand downwind RWY 05.

C: 9AHDG, roger, report downwind.

P: 9AHDG, wilco.

RAZGOVOR 16:

P: 9AFTG, at right hand downwind RWY 05.

C: 9AFTG, continue approach, report final RWY 05.

P: 9AFTG, wilco.

RAZGOVOR 17:

C: 9ADEG, cleared for takeoff RWY 05, wind 120/6kt.

P: cleared for takeoff RWY 05, 9ADEG.

C: 9ADEG, correct, report passing 2000ft.

P: 9ADEG, roger.

Ispravak:

C: 9ADEG, RWY 05, cleared for takeoff, wind 120/6kt.

P: RWY 05, cleared for takeoff, 9ADEG.

C: 9ADEG, correct, report passing 2000ft.

P: 9ADEG, wilco.

RAZGOVOR 18:

P: 9ADEG, airborne, turning right, proceeding to S2, climbing 3000ft.

C: 9ADEG, roger, report passing 2000ft.

P: 9ADEG, wilco.

RAZGOVOR 19:

P: 9AFTG, on final RWY 05.

C: 9AFTG, cleared to land RWY 05, wind 120/6kt.

P: cleared to land RWY 05, 9AFTG.

Ispravak:

C: 9AFTG, RWY 05, cleared to land, wind 120/6kt.

P: RWY 05, cleared to land, 9AFTG.

C: 9AFTG, correct.

RAZGOVOR 20:

P: 9AHDG, at left hand downwind RWY 05.

C: 9AHDG, roger, am, traffic is C172 on final RWY 05, report traffic in sight.

P: 9AHDG, traffic in sight.

C: 9AHDG, roger, follow C172 as number 2, report final.

P: number 2, to follow C172, wilco, 9AHDG.

C; 9AHDG, correct.

Ispravak:

C: 9AHDG, roger, number 2, follow C172, report final RWY 05.

P: number 2, to follow C172, wilco, 9AHDG.

C; 9AHDG, correct.

RAZGOVOR 21:

P: 9AFTG, landed at 13.

C: 9AFTG, roger, vacate RWY via C, report RWY vacated.

P: vacate the RWY via C, wilco, 9AFTG.

Ispravak:

C: 9AFTG, roger, vacate RWY via C, report RWY vacated.

P: vacate the RWY via C, wilco, 9AFTG.

C; 9AFTG, correct.

RAZGOVOR 22:

C: 9AHDG, after touch and go, turn left, **join left hand downwind.**

P: after touch and go to turn left, to join left hand downwind RWY 05, 9AHDG.

C: 9AHDG, correct.

Ispravak:

C: 9AHDG, after touch and go, turn left, **join left hand downwind RWY 05.**

P: after touch and go to turn left, to join left hand downwind RWY 05, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 23:

P: 9ADEG, passing 2000ft.

C: 9ADEG, roger, contact Zagreb radar on 120.7.

P: 120.7 9ADEG.

C: 9ADEG, correct, goodbye.

RAZGOVOR 24:

P: 9AHDG, on final RWY 05.

C: 9AHDG, roger, continue approach, expect landing clearance shortly.

P: continuing approach, roger, 9AHDG.

RAZGOVOR 25:

P: 9AFTG, RWY vacated.

C: 9HDG, **cleared for touch and go RWY 05**, wind 120/6kt.

P: **cleared for touch and go RWY 05**, 9AHDG.

Ispravak:

C: 9HDG, **RWY 05, cleared for touch and go**, wind 120/6kt.

P: **RWY 05, cleared for touch and go**, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 26:

P: Zagreb tower, 9ADBR, on general aviation apron, request taxi instructions.

C: 9ADBR, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 120/6kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1017, 9ADBR.

C: 9ADBR, negative, QNH 1019.

P: QNH 1019, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 27:

P: 9AVBC, inbound N3.

C: 9AVBC, roger, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9AVBC.

RAZGOVOR 28:

C: 9AHDG, traffic is C150 **joining left hand downwind**, from N3, 1500ft.

P: 9AHDG, traffic in sight.

C: 9AHDG, you are number 2.

P: number 2, roger, 9AHDG.

Ispravak:

C: 9AHDG, traffic is C150 **joining left hand downwind RWY 05**, from N3, 1500ft, report traffic in sight.

P: 9AHDG, traffic in sight.

RAZGOVOR 29:

C: 9AVBC, traffic is Piper 18, **joining left hand downwind**, 9AVBC, correction, **departing C172** and you are number 1.

P: traffic in sight, number 1, 9AVBC.

C: 9AVBC, correct.

Ispravak:

C: 9AVBC, traffic is Piper 18, **joining left hand downwind RWY 05**, correction, **traffic is departing C172** and you are number 1.

P: traffic in sight, number 1, 9AVBC.

C: 9AVBC, correct.

RAZGOVOR 30:

P: 9ADBR, ready to copy ATC clearance.

C: 9ADBR, cleared VFR flight to Sinj, when airborne turn right, proceed to S2 point, altitude 2500ft, SQUAWK 0015.

P: when airborne, correction, cleared VFR flight to Sinj, when airborne to turn right, to proceed to S2, altitude 2500ft, SQUAWK 0015, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 31:

P: 9ADBR, at holding point RWY 05.

C: 9ADBR, cleared for takeoff RWY 05, wind 120/6kt.

P: cleared for takeoff RWY 05, 9ADBR.

C: 9ADBR, correct.

Ispravak:

C: 9ADBR, RWY 05, cleared for takeoff, wind 120/6kt.

P: RWY 05, cleared for takeoff, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 32:

P: 9ADBR, airborne, turning right, proceeding to S2, climbing 2500ft.

C: 9ADBR, roger, report passing 2000ft.

P: 9ADBR, wilco.

RAZGOVOR 33:

P: 9AVBC, on final RWY 05.

C: 9AVBC, cleared to land RWY 05, wind 120/6kt.

P: cleared to land RWY 05, 9AVBC.

Ispravak:

C: 9AVBC, RWY 05, cleared to land, wind 120/6kt.

P: RWY 05, cleared to land, 9AVBC.

C: 9AVBC, correct.

RAZGOVOR 34:

P: 9AVBC, landed at 21.

C: 9AVBC, roger, vacate RWY via taxiway C, report RWY vacated.

P: to vacate RWY via taxiway C, wilco, 9AVBC.

C: 9AVBC, correct.

RAZGOVOR 35:

C: 9AHDG, after touch and go turn left, **join left hand downwind**.

P: after touch and go to turn left, to join left hand downwind, 9AHDG.

Ispravak:

C: 9AHDG, after touch and go turn left, **join left hand downwind RWY 05**.

P: after touch and go to turn left, to join left hand downwind RWY 05, 9AHDG.

C: 9AHDG, correct.

#### RAZGOVOR 36:

P: 9AHDG, on final RWY 05.

C: 9AHDG, **am, cleared for touch and go, 9AHDG**, continue approach, expect landing clearance shortly.

P: 9AHDG, roger.

Ispravak:

C: 9AHDG, **RWY 05, cleared for touch and go**, correction, continue approach, expect landing clearance shortly.

P: 9AHDG, roger.

#### RAZGOVOR 37:

P: 9ADBR, passing 2000ft.

C: 9ADBR, contact Zagreb radar on 120.7.

P: 120.7, 9ADBR.

Ispravak:

C: 9ADBR, contact Zagreb radar on 120.7.

P: 120.7, 9ADBR.

C: 9ADBR, correct.

#### RAZGOVOR 38:

P: 9AVBC, RWY vacated.

C: 9AVBC, **am**, roger, goodbye.

#### RAZGOVOR 39:

C: 9A, correction, 9AHDG, **cleared for touch and go RWY 05**, wind 120/6kt.

P: **cleared for touch and go RWY 05**, 9AHDG.

Ispravak:

C: 9A, correction, 9AHDG, **RWY 05, cleared for touch and go**, wind 120/6kt.

P: **RWY 05, cleared for touch and go**, 9AHDG.

C: 9AHDG, correct.



## STUDENT G:

### RAZGOVOR 1:

P: Zagreb tower, 9AHDG, training flight, request taxi instructions.

C: 9AHDG, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9AHDG.

C: 9AHDG, correct.

Ispravak:

P: Zagreb tower, 9AHDG, training flight, request taxi instructions.

C: 9AHDG, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9AHDG.

C: 9AHDG, correct.

### RAZGOVOR 2:

P: Zagreb tower, 9AFTG, inbound S1 point, altitude 2000ft.

C: 9AFTG, Zagreb tower, roger, proceed to S2 point, 2000ft.

P: to proceed to S2 point, 2000ft, 9AFTG.

C: 9AFTG, correct.

### RAZGOVOR 3:

C: 9AHDG, are you ready to copy ATC clearance?

P: 9AHDG, ready.

C: 9AHDG, cleared for VFR training flight, join, ~~am~~, correction, 9AHDG, ~~am~~, cleared, ~~am~~, correction, cleared for VFR training flight, ~~am~~, left hand traffic circuit, altitude 1500ft, SQUAWK 0001.

P: cleared for training flight, to join left hand traffic circuit, altitude 1500ft, SQUAWK 0001, 9AHDG.

C: 9AHDG, correct.

### RAZGOVOR 4:

P: 9AHDG, holding point RWY 05.

C: 9AHDG, line up RWY 05.

P: lining up RWY 05, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 5:

P: 9AHDG, ready for **takeoff**.

C: 9AHDG, **cleared for takeoff RWY 05**, wind 080/13kt.

P: **cleared for takeoff RWY 05**, 9AHDG.

C: 9AHDG, correct, report airborne.

P: 9AHDG, wilco.

Ispravak:

P: 9AHDG, ready for **departure**.

C: 9AHDG, **RWY 05, cleared for takeoff**, wind 080/13kt.

P: **RWY 05, cleared for takeoff**, 9AHDG.

C: 9AHDG, correct, report airborne.

P: 9AHDG, wilco.

RAZGOVOR 6:

P: 9AHDG, airborne at 6, turning left to left hand downwind RWY 05, altitude 1500ft.

C: 9AHDG, roger, **report downwind**.

P: 9AHDG, wilco.

Ispravak:

P: 9AHDG, airborne at 6, turning left to left hand downwind RWY 05, altitude 1500ft.

C: 9AHDG, roger, **report left hand downwind RWY 05**.

P: 9AHDG, wilco.

RAZGOVOR 7:

P: Zagreb tower, 9ADEG, VFR flight to Osijek, request taxi instructions.

C: 9ADEG, **Zagreb tower, taxi via taxiway A to holding point RWY 05**.

P: via taxiway A to holding point RWY 05, 9ADEG.

C: 9ADEG, correct.

Ispravak:

P: Zagreb tower, 9ADEG, VFR flight to Osijek, request taxi instructions.

C: 9ADEG, Zagreb tower, taxi via taxiway A to holding point RWY 05, **wind 080/13kt, QNH 1019**.

P: via taxiway A to holding point RWY 05, QNH 1019, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 8:

P: Zagreb tower, 9AVBC, inbound N1, altitude 2000ft.

C: 9AVBC, Zagreb tower, roger, proceed to N3 point, altitude 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to proceed to N3 point, altitude 2000ft, RWY in use 05, QNH 1019, 9AVBC.

C: 9AVBC, correct.

RAZGOVOR 9:

P: 9AHDG, left hand downwind RWY 05.

C: 9AHDG, roger, **am, when airborne turn left join left hand traffic circuit, altitude 1500ft.**

P: **when airborne to turn left to join left hand traffic circuit, altitude 1500ft, 9AHDG.**

C: 9AHDG, **correct.**

Ispravak:

P: 9AHDG, left hand downwind RWY 05.

C: 9AHDG, **roger, continue approach, report final.**

P: **continuing approach, wilco, 9AHDG.**

C: 9AHDG, correct.

RAZGOVOR 10:

P: 9ADEG, ready to copy ATC clearance.

C: 9ADEG, cleared VFR flight to Osijek, **altitude 3000ft, SQUAWK 0010.**

P: cleared VFR flight to Osijek, **altitude 3000ft, SQUAWK 0010, 9ADEG.**

C: 9ADEG, **correct.**

Ispravak:

P: 9ADEG, ready to copy ATC clearance.

C: 9ADEG, cleared VFR flight to Osijek, **when airborne turn left, proceed to S2 point, altitude 3000ft, SQUAWK 0010.**

P: cleared VFR flight to Osijek, **when airborne to turn left, to proceed to S2 point, altitude 3000ft, SQUAWK 0010, 9ADEG.**

C: 9ADEG, correct.

RAZGOVOR 11:

C: 9AHDG, **cleared touch and go RWY 05, wind 080/13kt.**

P: **cleared touch and go RWY 05, 9AHDG.**

C: 9AHDG, correct.

Ispravak:

C: 9AHDG, **RWY 05 cleared touch and go, wind 080/13kt.**

P: **RWY 05 cleared touch and go, 9AHDG.**

C: 9AHDG, correct.

RAZGOVOR 12:

P: 9AFTG, inbound S2 point, altitude 2000ft.

C: 9AFTG, roger, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, 9AFTG.

C: 9AFTG, correct.

RAZGOVOR 13:

P: 9ADEG, at holding point RWY 05.

C: 9ADEG, am, roger, traffic is C172 on final RWY 05, report traffic in sight.

P: 9ADEG, traffic in sight.

C: 9ADEG, behind C172, correction, hold position.

P: 9ADEG, holding position.

C: 9ADEG, correct.

RAZGOVOR 14:

P: 9AFTG, right hand downwind RWY 05.

C: 9AFTG, roger, **report final.**

P: 9AFTG, wilco.

C: 9AFTG, correction, **report base.**

P: 9AFTG, wilco.

Ispravak:

P: 9AFTG, right hand downwind RWY 05.

C: 9AFTG, roger, continue approach, **report final RWY 05.**

P: continuing approach, wilco, 9AFTG.

C: 9AFTG, correction, **report left hand base RWY 05.**

P: 9AFTG, wilco.

RAZGOVOR 15:

P: 9AFTG, base RWY 05.

C: 9AFTG, roger.

RAZGOVOR 16:

P: 9AHDG, touch and go completed, turning left, joining left hand downwind RWY 05, climbing altitude 1500ft.

C: 9AHDG, roger, report downwind.

P: 9AHDG, wilco.

RAZGOVOR 17:

C: 9AFTG, cleared to land RWY 05, wind 080/13kt.

P: cleared to land RWY 05, 9AFTG.

C: 9AFTG, correct.

Ispravak:

C: 9AFTG, RWY 05 cleared to land, wind 080/13kt.

P: RWY 05 cleared to land, 9AFTG.

C: 9AFTG, correct.

RAZGOVOR 18:

C: 9ADEG, traffic is C172 on final RWY 05, report traffic in sight.

P: 9ADEG, traffic in sight.

C: 9ADEG, behind C172 line up behind.

P: behind C172 to line up behind, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 19:

P: 9AFTG, landed at 13.

C: 9AFTG, vacate via taxiway D, taxi to the apron, via taxiway F.

P: to vacate the RWY via taxiway D and F to the apron, 9AFTG.

C: 9AFTG, correct, report RWY vacated.

P: 9AFTG, wilco.

Ispravak:

C: 9AFTG, vacate the RWY via taxiway D, taxi to the apron, via taxiway F.

P: to vacate the RWY via taxiway D and F to the apron, 9AFTG.

RAZGOVOR 20:

P: 9AHDG, left hand downwind RWY 05.

C: 9AHDG, roger, when airborne turn left, join left hand traffic circuit, altitude 1500ft.

P: when airborne to turn left, to join left hand traffic circuit, altitude 1500ft, 9ADHG.

C: 9AHDG, correct.

Ispravak:

P: 9AHDG, left hand downwind RWY 05.

C: 9AHDG, roger, continue approach, report final RWY 05.

P: continuing approach, wilco, 9AHDG

C: 9AHDG, correct.

RAZGOVOR 21:

P: 9ADEG, lining up RWY 05.

C: 9ADEG, roger, standby.

RAZGOVOR 22:

P: 9AFTG, RWY vacated.

C: 9AFTG, roger.

RAZGOVOR 23:

C: 9ADEG, cleared for takeoff RWY 05, wind 080/13kt.

P: cleared for takeoff RWY 05, 9ADEG.

C: 9ADEG, correct, report airborne.

P: 9ADEG, wilco.

Ispravak:

C: 9ADEG, RWY 05 cleared for takeoff, wind 080/13kt.

P: RWY 05 cleared for takeoff, 9ADEG.

C: 9ADEG, correct, report airborne.

RAZGOVOR 24:

P: Zagreb tower, 9ADBR, VFR flight to Sinj, request taxi instructions.

C: 9ADBR, taxi to holding point, am, correction, taxi via taxiway A to RWY 05, RWY in use 05, wind 080/13kt, QNH 1019.

P: via taxiway A to holding point RWY 05, QNH 1019, 9ADBR.

C: 9ADBR, correct.

Ispravak:

C: 9ADBR, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: via taxiway A to holding point RWY 05, QNH 1019, 9ADBR.

RAZGOVOR 25:

P: 9ADEG, airborne at 15, turning right to Osijek, climbing to altitude 3000ft.

C: 9ADEG, roger, report passing 2000ft.

P: 9ADEG, wilco.

RAZGOVOR 26:

C: 9AHDG, cleared for touch and go RWY 05, wind 080/13kt.

P: cleared for touch and go RWY 05, 9AHDG.

Ispravak:

C: 9AHDG, RWY 05, cleared for touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 27:

C: 9ADBR, ready to copy ATC clearance?

P: 9ADBR, ready.

C: 9ADBR, cleared VFR flight to Sinj, when airborne turn right to S2 point, altitude 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right to S2 point, altitude 2500ft, SQUAWK 0015, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 28:

P: 9ADEG, passing 2000ft.

C: 9ADEG, contact Zagreb radar on 120.7.

P: 120.7, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 29:

P: 9AHDG, touch and go completed, turning left to join left hand downwind RWY 05, climbing 1500ft.

C: 9AHDG, roger, report airborne, correction, report downwind.

P: 9AHDG, wilco.

RAZGOVOR 30:

P: 9AVBC, inbound N3 point, altitude 2000ft.

C: 9AVBC, roger, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9AVBC.

C: 9AVBC, correct.

RAZGOVOR 31:

P: 9ADBR, holding point RWY 05.

C: 9ADBR, roger, hold short of RWY 05.

P: 9ADBR, roger.

RAZGOVOR 32:

C: 9AHDG, traffic is C150 on downwind, am, left hand downwind RWY 05.

P: 9AHDG, traffic in sight.

Ispravak:

C: 9AHDG, traffic is C150 on left hand downwind RWY 05, report traffic in sight.

P: 9AHDG, traffic in sight.

RAZGOVOR 33:

C: 9AVBC, traffic is C172 on left hand downwind RWY 05.

P: 9AVBC, traffic in sight.

RAZGOVOR 34:

P: 9AVBC, left hand downwind RWY 05.

C: 9AVBC, roger, cleared, am, cleared to land RWY 05, wind 080/13kt.

P: cleared to land RWY 05, 9AVBC.

C: 9AVBC, correct.

Ispravak:

C: 9AVBC, roger, cleared, correction, RWY 05, cleared to land, wind 080/13kt.

P: RWY 05, cleared to land, 9AVBC.

C: 9AVBC, correct.

RAZGOVOR 35:

P: 9AHDG, left hand downwind RWY 05.

C: 9AHDG, roger, make one orbit to the right, report orbit completed.

P: one orbit to the right, wilco, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 36:

P: 9AHDG, orbit completed.

C: 9AHDG, when airborne turn left, join left hand traffic circuit, climb 1500ft, report base.



P: when airborne turn left to join left hand traffic circuit, 1500ft, wilco, 9AHDG.

C: 9AHDG, correct.

Ispravak:

C: 9AHDG, roger, report left hand base RWY 05.

P: 9AHDG, wilco.

RAZGOVOR 37:

P: 9AVBC, landed at 23.

C: 9AVBC, roger, vacate the RWY via taxiway D, taxi to the apron via taxiway F, report RWY vacated.

P: to vacate the RWY via taxiway D and F to the apron, wilco, 9AVBC.

C: 9AVBC, correct.

RAZGOVOR 38:

C: 9AHDG, cleared to land RWY 05, correction, cleared for touch and go RWY 05, wind 080/13kt.

P: cleared for touch and go RWY 05, 9AHDG.

Ispravak:

C: 9AHDG, RWY 05, cleared touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AHDG.

C: 9AHDG, correct.

RAZGOVOR 39:

P: 9AVBC, RWY vacated.

C: 9AVBC, roger.

RAZGOVOR 40:

C: 9ADBR, traffic is C172 on final, report traffic in sight.

P: 9ADBR, traffic in sight.

C: 9ADBR, behind C172, line up behind.

P: behind C172 to line up behind, 9ADBR.

C: 9ADBR, correct.

Ispravak:

C: 9ADBR, traffic is C172 on final RWY 05, report traffic in sight.

P: 9ADBR, traffic in sight.

## STUDENT H:

### RAZGOVOR 1:

P: Zagreb tower, 9ADVJ, over S1 point, 2000ft, for landing at Zagreb.

C: 9ADVJ, Zagreb tower, proceed to S2 point, altitude 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to proceed to S2 point, altitude 2000ft, RWY in use 05, QNH 1019, 9ADVJ.

C: 9ADVJ, correct.

### RAZGOVOR 2:

P: Zagreb tower, 9AJFS, VFR training flight for aerodrome traffic circuits, request taxi instructions.

C: 9AJFS, Zagreb tower, taxi via taxiway A to holding point RWY 05, am, RWY in use 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding RWY 05, QNH 1019, 9AJFS.

C: 9AJFS, correct.

### RAZGOVOR 3:

C: 9AJFS, are you ready to copy ATC clearance?

P: 9AJFS, ready.

C: 9AJFS, cleared VFR training flight, left hand traffic circuit RWY 05, climb to altitude 1500ft, am, SQUAWK 0001.

P: cleared VFR training flight, left hand traffic circuit RWY 05, 1500ft, SQUAWK 0001, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, cleared VFR training flight, when airborne turn left, left hand traffic circuit RWY 05, climb to altitude 1500ft, am, SQUAWK 0001.

P: cleared VFR training flight, when airborne to turn left, left hand traffic circuit RWY 05, 1500ft, SQUAWK 0001, 9AJFS.

C: 9AJFS, correct.

### RAZGOVOR 4:

P: 9AJFS, at holding point RWY 05.

C: 9AJFS, cleared for takeoff RWY 05, wind 080/13kt.

P: cleared for takeoff RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05 cleared for takeoff, wind 080/13kt.

P: RWY 05 cleared for takeoff, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 5:

P: 9AJFS, airborne at 15, turning left to join left hand traffic pattern, altitude 1500ft.

C: 9AJFS, roger, report left hand downwind RWY 05.

P: 9AJFS, wilco.

RAZGOVOR 6:

P: Zagreb tower, 9AJUT, VFR flight to Osijek, request taxi instructions.

C: 9AJUT, taxi via taxiway A to holding point RWY 05, am, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9AJUT.

C: 9AJUT, correct.

Ispravak:

P: Zagreb tower, 9AJUT, VFR flight to Osijek, request taxi instructions.

C: 9AJUT, Zagreb tower, taxi via taxiway A to holding point RWY 05, am, wind 080/13kt, QNH 1019.

RAZGOVOR 7:

P: 9AJFS, left hand downwind RWY 05.

C: 9AJFS, report final RWY 05.

P: 9AJFS, wilco.

Ispravak:

P: 9AJFS, left hand downwind RWY 05.

C: 9AJFS, continue approach, report final RWY 05.

P: continuing approach, wilco, 9AJFS.

RAZGOVOR 8:

P: Zagreb tower, 9ATAD, over N1 point, altitude 2000ft, for landing at Zagreb.

C: Station calling, Zagreb tower, say again.

P: Zagreb tower, 9ATAD, over N1 point, altitude 2000ft.

C: 9ATAD, Zagreb tower, proceed to N3 point, at 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to proceed to N3 point, at 2000ft, RWY in use 05, QNH 1019, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 9:

P: 9ADVJ, over S2 point, request joining instructions.

C: 9ADVJ, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 10:

C: 9AJFS, after touch and go, turn left, join left hand downwind RWY 05.

P: after touch and go to turn left, to join left hand downwind RWY 05, 9AJFS.

C: 9AJFS, correct, climb to 1500ft.

P: after touch and go to climb to 1500ft, 9AJFS.

C: 9AJFS, correct.

P: 9AJFS, turning final RWY 05.

C: 9AJFS, roger, **cleared to land RWY 05**, wind 080/13kt.

C: 9AJFS, disregard, **cleared for touch and go RWY 05**, wind 080/13kt.

P: cleared for touch and go RWY 05, 9AJFS.

Ispravak:

C: 9AJFS, roger, RWY 05, **cleared to land**, wind 080/13kt.

C: 9AJFS, disregard, RWY 05, **cleared for touch and go**, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 11:

P: 9ADVJ, right hand downwind RWY 05.

C: 9ADVJ, roger, **report base RWY 05**.

P: 9ADVJ, wilco.

Ispravak:

C: 9ADVJ, roger, continue approach, report left hand base RWY 05.

P: continuing approach, wilco, 9ADVJ.

RAZGOVOR 12:

C: 9ADVJ, disregard, report right hand base RWY 05.

P: 9ADVJ, wilco.

RAZGOVOR 13:

C: 9ADVJ, traffic is, **am**, C172 on final RWY 05, report traffic in sight.

P: 9ADVJ, traffic in sight.

C: 9ADVJ, roger, number 2, follow C172, report final RWY 05.

P: number 2, to follow C172, wilco, 9ADVJ.

Ispravak:

P: number 2, to follow C172, wilco, 9ADVJ.

C: 9ADVJ, correct.

#### RAZGOVOR 14:

P: 9AJFS, touch and go completed, turning left to join left hand downwind RWY 05, 1500ft.

C: 9AJFS, roger, report left hand downwind RWY 05.

P: 9AJFS, wilco.

#### RAZGOVOR 15:

C: 9ADVJ, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, 9ADVJ.

C: 9ADVJ, correct.

Ispravak:

C: 9ADVJ, RWY 05, cleared to land, wind 080/13kt.

P: RWY 05, cleared to land, 9ADVJ.

C: 9ADVJ, correct.

#### RAZGOVOR 16:

P: 9AJUT, at holding point RWY 05, ready to copy ATC clearance.

C: 9AJUT, standby.

C: 9AJUT, cleared to Osijek, **am**, correction 9AJUT, cleared VFR flight to osijek, when airborne turn right, proceed to E2 point, 3000ft, SQUAWK 0010.

P: cleared VFR flight to Osijek, when airborne to turn right, to proceed to E2 point, altitude 3000ft, SQUAWK 0010, 9AJUT.

#### RAZGOVOR 17:

P: 9AJFS, correction, left hand downwind RWY 05.

C: 9AJFS, roger, report **left hand** final RWY 05.

P: 9AJFS, wilco.

Ispravak:

C: 9AJFS, roger, **report final** RWY 05.

P: 9AJFS, wilco.

RAZGOVOR 18:

C: 9ADVJ, confirm RWY landed.

P: 9ADVJ, landed at 22, request taxi instructions.

C: 9ADVJ, vacate the RWY via taxiway C, report RWY vacated.

P: to vacate the RWY via taxiway C, wilco, 9ADVJ.

C: 9ADVJ, correct.

RAZGOVOR 19:

P: 9ADVJ, RWY vacated.

C: 9ADVJ, roger.

RAZGOVOR 20:

C: 9AJUT, traffic is C172, am, on base RWY 05, report traffic in sight.

P: 9AJUT, looking out.

Ispravak:

C: 9AJUT, traffic is C172, am, on left hand base RWY 05, report traffic in sight.

P: 9AJUT, looking out.

RAZGOVOR 21:

P: 9AJUT, traffic in sight.

C: 9AJUT, roger, behind C172 line up behind.

P: behind C172 to line up behind, 9AJUT.

C: 9AJUT, correct.

RAZGOVOR 22:

P: 9AJFS, turning final RWY 05.

C: 9AJFS, cleared for touch and go RWY 05, wind 080/13kt.

P: cleared for touch and go RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 23:

P: Zagreb tower, 9ACVN, VFR flight to Sinj, request taxi instructions.

C: 9ACVN, taxi via taxiway A to holding point RWY 05, ~~RWY in use 05~~, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ACVN.

C: 9ACVN, correct.

Ispravak:

P: Zagreb tower, 9ACVN, VFR flight to Sinj, request taxi instructions.

C: 9ACVN, **Zagreb tower**, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

#### RAZGOVOR 24:

P: 9AJFS, touch and go completed, turning left to join left hand downwind RWY 05, altitude 1500ft.

C: 9AJFS, roger.

C: 9AJFS, report left hand downwind RWY 05.

P: 9AJFS, wilco.

#### RAZGOVOR 25:

C: 9AJUT, **cleared for takeoff RWY 05**, wind 080/13kt.

P: **cleared for takeoff RWY 05**, 9AJUT.

Ispravak:

C: 9AJUT, **RWY 05, cleared for takeoff**, wind 080/13kt.

P: **RWY 05, cleared for takeoff**, 9AJUT.

C: 9AJUT, correct.

#### RAZGOVOR 26:

C: 9ACVN, are you ready to copy ATC clearance?

P: 9ACVN, ready.

C: 9ACVN, cleared VFR flight to Sinj, when airborne, turn right, proceed to S1 point, altitude 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right, to S1 point, altitude 2500ft, SQUAWK 0015, 9ACVN.

C: 9ACVN, correct.

#### RAZGOVOR 27:

P: 9ATAD, over N3 point, request joining instructions.

C: 9ATAD, orbit at present positions.

P: to orbit from present position, 9ATAD.

C: 9ATAD, RWY in use 05, wind 080/13kt, QNH 1019.

P: RWY in use 05, QNH 1019, 9ATAD.

RAZGOVOR 28:

P: 9AJUT, airborne at 28, turning right to S2 point, at 3000ft.

C: 9AJUT, roger, report passing 2000ft.

RAZGOVOR 29:

C: 9AJFS, after touch and go, turn left to join left hand downwind RWY 05.

P: after touch and go to turn left, to join left hand downwind RWY 05, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 30:

P: 9AJFS, am, request instructions, at left hand downwind RWY 05.

C: 9AJFS, **report final RWY 05.**

P: 9AJFS, wilco.

Ispravak:

C: 9AJFS, **continue approach**, report final RWY 05.

P: continuing approach, wilco, 9AJFS.

RAZGOVOR 31:

P: 9ACVN, at holding point RWY 05.

C: 9ACVN, hold position.

P: holding position, 9ACVN.

RAZGOVOR 32:

P: 9AJUT, passing 2000ft.

C: 9AJUT, roger, contact Zagreb radar on 120.7.

P: 120.7, 9AJUT.

Ispravak:

C: 9AJUT, roger, contact Zagreb radar on 120.7.

P: 120.7, 9AJUT.

C: 9AJUT, correct.

RAZGOVOR 33:

C: 9AJFS, **cleared for touch and go RWY 05**, wind 080/13kt.



P: cleared for touch and go RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 34:

C: 9ATAD, stop orbiting, continue approach for RWY 05, join left hand downwind RWY 05.

P: continuing approach for RWY 05, to join left hand downwind RWY 05, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 35:

C: 9ACVN, traffic is C172 on final RWY 05, report traffic in sight.

P: 9ACVN, traffic in sight.

C: 9ACVN, behind C172 line up behind.

P: behind C172 to line up behind, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 36:

P: 9AJFS, touch and go completed, turning left to join left hand downwind RWY 05, altitude 1500ft.

C: 9AJFS, roger, report left hand downwind RWY 05.

P: 9AJFS, wilco.

RAZGOVOR 37:

C: 9ACVN, cleared for takeoff RWY 05, wind, correction, wind 080/13kt.

P: cleared for takeoff RWY 05, 9ACVN.

Ispravak:

C: 9ACVN, RWY 05, cleared for takeoff, wind, correction, wind 080/13kt.

P: RWY 05, cleared for takeoff, 9ACVN.

C: 9ACVN, correct.

RAZGOVOR 38:

P: 9ACVN, airborne at 35, turning right to S2 point, altitude 2500ft.

C: 9ACVN, roger, report passing 2500ft.

P: 9ACVN, wilco.

RAZGOVOR 39:

C: 9ATAD, cleared to land RWY 05, wind 080/13kt.

P: cleared to land RWY 05, 9ADTAD.

C: 9ATAD, correct.

Ispravak:

C: 9ATAD, RWY 05, cleared to land, wind 080/13kt.

P: RWY 05, cleared to land, 9ADTAD.

C: 9ATAD, correct.

RAZGOVOR 40:

P: 9AJFS, left hand downwind RWY 05.

C: 9AJFS, extend left hand downwind RWY 05, traffic is C172 on final RWY 05, report traffic in sight.

P: extending downwind RWY 05, traffic in sight, 9AJFS.

C: 9AJFS, correct, roger, number 2, follow C172, report on final RWY 05.

P: number 2, to follow C172, wilco, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 41:

P: 9ATAD, landed at 36, request taxi instructions.

C: 9ATAD, roger, vacate the RWY via taxiway C, report RWY vacated.

P: to vacate the RWY via taxiway C, wilco, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 42:

P: 9ATAD, RWY vacated.

C: 9ATAD, roger, taxi via taxiway F to the apron.

P: to taxi via taxiway F to the apron, 9ATAD.

C: 9ATAD, correct.

RAZGOVOR 43:

P: 9ACVN, passing 2000ft.

C: 9ACVN, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ACVN, bye.

C: 9ACVN, correct, goodbye.

RAZGOVOR 44:

C: 9AJFS, after touch and go turn left to join left hand downwind RWY 05.

P: after touch and go to turn left to join left hand downwind RWY 05, 9A, correction, 9AJFS.

C: 9AJFS, correct.

RAZGOVOR 45:

C: 9AJFS, cleared for touch and go RWY 05, wind 080/13kt.

P: cleared for touch and go RWY 05, 9AJFS.

C: 9AJFS, correct.

Ispravak:

C: 9AJFS, RWY 05, cleared for touch and go, wind 080/13kt.

P: RWY 05, cleared for touch and go, 9AJFS.

C: 9AJFS, correct.

## **VJEŽBA 4.**

### **STUDENT D:**

RAZGOVOR 1:

P: Zagreb tower, 9ADAP, inbound N3 point, request low approach at Zagreb.

C: 9ADAP, am, roger, continue to N3 point, RWY 05, wind 080/13kt, QNH 1019.

P: to N3 point, roger, QNH 1019, RWY 05, 9ADAP.

C: 9ADAP, correct.

Ispravak:

C: 9ADAP, Zagreb tower, continue to N3 point, RWY in use 05, wind 080/13kt, QNH 1019.

P: continuing to N3 point, RWY in use 05, QNH 1019, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 2:

P: Zagreb tower, 9ADEG, at general aviation apron, VFR flight to Varaždin, request taxi instructions.

C: 9ADEG, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 3:

P: 9ADAP, passing N3 point, request joining instructions.

C: 9ADAP, join left hand downwind RWY 05.

P: joining left hand downwind RWY 05.

C: 9ADAP, correct.

RAZGOVOR 4:

C: 9ADEG, are you ready to copy ATC clearance?

P: 9ADEG, affirm.

C: 9ADEG, cleared VFR flight to Varaždin, when airborne turn left, proceed to N1 point, altitude 3000ft, SQUAWK 0010.

P: cleared VFR flight to Varaždin, when airborne to turn left, to proceed to N1 point, to climb to 3000ft, SQUAWK 0010, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 5:

P: 9ADAP, left hand downwind RWY 05.

C: 9ADAP, continue approach, report final.

P: continue approach, wilco, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 6:

C: 9ADAP, after low approach turn right, proceed to, am, E2 point, climb 3000ft, SQUAWK 0010.

P: after low approach to turn right to E2 point, to climb to 3000ft, SQUAWK, confirm SQUAWK 0001, 9ADAP.

C: 9ADAP, correct.

Ispravak:

P: after low approach to turn right to E2 point, to climb to 3000ft, confirm SQUAWK 0001, 9ADAP.

C: 9ADAP, SQUAWK 0010.

P: SQUAWK 0010, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 7:

P: 9ADAP, turning final RWY 05.

C: 9ADAP, **cleared to land RWY 05**, wind 080/13kt, not below 1000ft, QNH 1019.

P: confirmed cleared to land, we are for low approach, 9ADAP.

C: 9ADAP, **correct**.

Ispravak:

C: 9ADAP, **RWY 05, cleared to land**, wind 080/13kt, not below 1000ft, QNH 1019.

P: confirmed cleared to land, we are for low approach, 9ADAP.

C: 9ADAP, **RWY 05, cleared for low approach**, wind 080/13kt, not below 1000ft, QNH 1019.

P: RWY 05, cleared for low approach, not below 1000ft, QNH 1019, 9ADAP.

C: 9ADAP, **correct**.

#### RAZGOVOR 8:

P: 9ADEG, holding point RWY 05.

C: 9ADEG, traffic is C172, **just approaching, am, just passing final** RWY 05, report traffic in sight.

P: 9ADEG, traffic in sight.

C: 9ADEG, behind C172, line up behind.

P: behind C172, to line up behind, 9ADEG.

C: 9ADEG, **correct**.

Ispravak:

C: 9ADEG, traffic is C172, **on final RWY 05**, report traffic in sight.

P: 9ADEG, traffic in sight.

#### RAZGOVOR 9:

P: 9ADAP, low approach completed, climbing to 3000ft.

C: 9ADAP, report passing 2000ft.

P: 9ADAP, **wilco**.

#### RAZGOVOR 10:

C: 9ADEG, **cleared for takeoff RWY 05**, wind 080/13kt.

P: **cleared for takeoff RWY 05**, 9ADEG.

C: 9ADEG, **correct**.

Ispravak:

C: 9ADEG, **RWY 05, cleared for takeoff**, wind 080/13kt.

P: **RWY 05, cleared for takeoff**, 9ADEG.

C: 9ADEG, **correct**.

RAZGOVOR 11:

P: 9ADEG, airborne at 59.

C: 9ADEG, roger, report passing 2000ft.

P: 9ADEG, wilco.

RAZGOVOR 12:

P: 9ADAP, passing 2000ft.

C: 9ADAP, contact Zagreb radar on 120.7.

P: 120.7, 9ADAP, bye bye.

C: 9ADAP, correct, bye.

RAZGOVOR 13:

P: Zagreb tower, 9ADAB, VFR flight from Grobnik to Zagreb, passing W1 point, maintaining 2000ft.

C: 9ADAB, Zagreb tower, proceed to N3 point, am, RWY 05, wind 080/13kt, QNH 1019.

P: to N3 point, QNH 1019, RWY 05, 9ADAB.

C: 9ADAB, correct.

Ispravak:

C: 9ADAB, Zagreb tower, proceed to N3 point, RWY in use 05, wind 080/13kt, QNH 1019.

P: to N3 point, RWY in use 05, QNH 1019, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 14:

P: 9ACDH, inbound N1 point, VFR flight from Varaždin to Zagreb, maintaining 2000ft.

C: 9ACDH, Zagreb tower, proceed to N3 point, RWY 05, wind 080/13kt, QNH 1019.

P: to N3 point, QNH 1019, RWY 05, 9ACDH.

C: 9ACDH, correct.

Ispravak:

C: 9ACDH, Zagreb tower, proceed to N3 point, RWY in use 05, wind 080/13kt, QNH 1019.

P: to N3 point, RWY in use 05, QNH 1019, 9ACDH.

C: 9ACDH, correct.

RAZGOVOR 15:

P: 9ADEG, passing 2000ft.

C: 9ADEG, contact Zagreb radar on 120.7.

P: 120.7, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 16:

C: 9ACDH, traffic is **am**, C172, from W1 to N3 at 2000ft, report traffic in sight.

P: 9ACDH, looking out.

RAZGOVOR 17:

C: 9ADAB, traffic is C150, from N1 to N3, at 2000ft, report traffic in sight.

P: 9ADAB, looking out.

RAZGOVOR 18:

P: Zagreb tower, S8DEG, inbound S1, maintaining 2500ft, for landing in Zagreb.

C: S8DEG, Zagreb tower, proceed to S2 point, at 2500ft, wind 080/13kt, QNH 1019.

P: proceeding to S2 point, QNH 1019, RWY 05, S8DEG.

C: S8DEG, correct.

Ispravak:

C: S8DEG, Zagreb tower, proceed to S2 point, at 2500ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: proceeding to S2 point, 2500ft, RWY in use 05, QNH 1019, S8DEG.

C: S8DEG, correct.

RAZGOVOR 19:

C: 9ADAB, join **direct** left hand base RWY 05.

P: join left hand base RWY 05, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 20:

C: 9ADAB, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, 9ADAB.

C: 9ADAB, correct.

Ispravak:

C: 9ADAB, **RWY 05, cleared to land**, wind 080/13kt.

P: **RWY 05, cleared to land**, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 21:

P: Zagreb tower, 9ADBR, VFR flight to Sinj, request taxi instructions.

C: 9ADBR, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 22:

P: 9ADAB, landed at 09.

C: 9ADAB, vacate RWY via taxiway C, taxi to **holding point am**, correction, taxi to apron via taxiway F, report RWY vacated.

P: vacating the RWY via taxiway C, to taxi via F to the apron, wilco, 9ADAB.

C: 9ADAB, correct.

Ispravak:

C: 9ADAB, vacate RWY via taxiway C, **taxi to the apron via taxiway F**, report RWY vacated.

P: vacating the RWY via taxiway C, to taxi via taxiway F to the apron, wilco, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 23:

C: 9ADBR, are you ready to copy ATC clearance?

P: 9ADBR, affirm.

C: 9ADBR, cleared VFR flight to Osijek, when airborne turn right, proceed to S1 point, at 2500ft, SQUAWK 0015.

P: confirm VFR flight to Osijek, 9ADBR.

C: 9ADBR, disregard previous instruction, cleared VFR flight to Sinj, when airborne turn right, proceed to S1 point, at 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right, to proceed to S1 point, at 2500ft, SQUAWK 0015, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 24:

P: 9ADAB, RWY vacated.

C: 9ADAB, roger.

RAZGOVOR 25:

C: 9ADBR, are you ready for departure?

P: 9ADBR, negative.

C: 9ADBR, roger.



RAZGOVOR 26:

P: 9ADBR, holding point RWY 05.

C: 9ADBR, cleared for takeoff RWY 05, wind 080/13kt, am.

P: cleared for takeoff RWY 05, 9ADBR.

C: 9ADBR, correct.

Ispravak:

C: 9ADBR, RWY 05, cleared for takeoff, wind 080/13kt.

P: RWY 05, cleared for takeoff, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 27:

P: 9ADBR, airborne at 13.

C: 9ADBR, roger, report passing 2000ft.

P: 9ADBR, wilco.

RAZGOVOR 28:

C: 9ADBR, traffic is C172, from S1 to S2, at 2500ft, report traffic in sight.

P: 9ADBR, traffic in sight.

C: 9ADBR, roger.

RAZGOVOR 29:

C: S8DEG, traffic is Cessna, (correction) Piper18, just departed RWY 05, report traffic in sight.

P: S8DEG, traffic in sight.

C: S8DEG, roger.

Ispravak:

C: S8DEG, traffic is Cessna, correction, Piper18, just departed RWY 05, report traffic in sight.

P: S8DEG, traffic in sight.

C: S8DEG, roger.

RAZGOVOR 30:

P: 9ACDH, over, correction, overhead N3 point.

C: 9ACDH, join left hand downwind RWY 05.

P: joining left hand downwind RWY 05, 9ACDH.

C: 9ACDH, correct.

RAZGOVOR 31:

P: S8DEG, passing S2 point.

C: S8DEG, join right hand downwind RWY 05.

P: joining right hand downwind RWY 05, S8DEG.

C: S8DEG, correct.

RAZGOVOR 32:

P: 9ADBR, maintaining 2000ft until clear of traffic.

C: 9ADBR, roger.

RAZGOVOR 33:

P: 9ADBR, passing 2000ft, climbing to 2500ft.

C: 9ADBR, roger, contact Zagreb radar on 120, correction, 120.7.

P: 120.7, 9ADBR, bye bye.

C: 9ADBR, correct, bye bye.

RAZGOVOR 34:

P: S8DEG, right hand downwind RWY 05.

C: S8DEG, extend downwind, traffic is C150, just turning final RWY 05, report traffic in sight.

P: extending downwind, traffic in sight, S8DEG.

C: S8DEG, number 2, follow C150, report final.

P: number 2, following C150, wilco, S8DEG.

C: S8DEG, correct.

RAZGOVOR 35:

P: 9ACDH, final RWY 05.

C: 9ACDH, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, 9ACDH.

C: 9ACDH, correct.

Ispravak:

C: 9ACDH, **RWY 05, cleared to land**, wind 080/13kt.

P: **RWY 05, cleared to land**, 9ACDH.

C: 9ACDH, correct.

RAZGOVOR 36:

P: 9ACDH, landed at 18.

C: 9ACDH, roger, vacate the RWY via taxiway C, taxi via taxiway F to the apron.

P: vacating the RWY via taxiway C, to taxi via taxiway F to the apron, 9ACDH.

C: 9ACDH, roger, am, correct, report RWY vacated.

P: 9ACDH, wilco.

Ispravak:

C: 9ACDH, correct, report RWY vacated.

P: 9ACDH, wilco.

RAZGOVOR 37:

P: S8DEG, turning final RWY 05.

C: S8DEG, roger, expect landing clearance shortly.

P: S8DEG, roger.

**STUDENT E:**

RAZGOVOR 1:

P: Zagreb tower, 9ABMF, departed from Lučko to Osijek, maintaining 1500ft, request low approach at Zagreb.

C: 9ABMF, Zagreb tower, proceed to N3 point, altitude 1500ft, RWY in use 05, wind 080/7kt, QNH 1016.

P: to proceed to N3 point, maintain 1500ft, RWY in use 05, QNH 1016, 9ABMF.

C: 9ABMF, correct.

RAZGOVOR 2:

C: 9ABMF, after low approach, turn right, proceed to E2 point, altitude 3000ft, SQUAWK 0016.

P: after low approach to turn right, to proceed to E2 point, altitude 3000ft, SQUAWK 0018.

C: 9ABMF, negative, SQUAWK 0016.

P: SQUAWK 0016, 9ABMF.

C: 9ABMF, correct.

RAZGOVOR 3:

P: 9ABMF, inbound N3, request joining instructions.

C: 9ABMF, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9ABMF.

C: 9ABMF, correct.

RAZGOVOR 4:

C: 9ABMF, cleared for low approach RWY 05, wind 080/7kt, not below 1000ft, QNH 1016.

P: cleared for low approach RWY 05, not below 1000ft, QNH 1016, 9ABMF.

C: 9ABMF, correct.

Ispravak:

C: 9ABMF, RWY 05, cleared for low approach, wind 080/7kt, not below 1000ft, QNH 1016.

P: RWY 05, cleared for low approach, not below 1000ft, QNH 1016, 9ABMF.

C: 9ABMF, correct.

RAZGOVOR 5:

P: Zagreb tower, 9AMLA, inbound W1, maintaining altitude 2000ft.

C: 9AMLA, Zagreb tower, proceed to N3 point, maintain 2000ft, RWY in use 05, QNH 1016, wind 080/7kt.

P: to proceed to N3 point, RWY in use 05, QNH 1016, 9AB, correction, 9AMLA.

C: 9AMLA, correct.

Ispravak:

C: 9AMLA, Zagreb tower, proceed to N3 point, maintain 2000ft, RWY in use 05, wind 080/7kt, QNH 1016.

P: to proceed to N3 point, to maintain 2000ft, RWY in use 05, QNH 1016, 9AMLA.

C: 9AMLA, correct.

RAZGOVOR 6:

P: Zagreb tower, 9ADBR, general aviation apron request joining instructions.

C: 9ADBR, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/7kt, QNH 1016.

P: to taxi via taxiway A to holding point RWY 05, QNH 1016, 9ADBR.

C: 9ADBR, correct, are you ready to copy ATC clearance?

P: 9ADBR, ready.

RAZGOVOR 7:

P: 9ABMF, low approach completed, turning right, proceeding to E2 point, climbing to 3000ft.

C: 9ABMF, roger, report passing 2000ft.

P: 9ABMF, wilco.

RAZGOVOR 8:

C: 9ADBR, cleared to Sinj via flight planned route, when airborne turn right, proceed to S2 point, altitude 2500, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right, to proceed to S2 point, altitude 2500ft, SQUAWK 0015, 9ADBR.

C: 9ADBR, correct.

Ispravak:

C: 9ADBR, cleared VFR flight to Sinj via flight planned route, when airborne turn right, proceed to S2 point, altitude 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj via flight planned route, when airborne to turn right, to proceed to S2 point, altitude 2500ft, SQUAWK 0015, 9ADBR.

#### RAZGOVOR 9:

C: okay, 9ADBR, traffic is C150, just departed, am, RWY 05, proceeding to E2 point, climbing 3000ft.

P: 9ADBR, looking out.

Ispravak:

C: 9ADBR, traffic is C150, just departed RWY 05, proceeding to E2 point, climbing 3000ft, report traffic in sight.

P: 9ADBR, looking out.

#### RAZGOVOR 10:

P: 9ABMF, passing 2000ft.

C: 9ABMF, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ABMF.

C: 9ABMF, correct.

#### RAZGOVOR 11:

P: Zagreb tower, 9ADVJ, inbound N1, maintaining 2000ft.

C: 9ADVJ, Zagreb tower, proceed to N3 point, maintain 2000ft, RWY in use 05, wind 080/7kt, QNH 1016.

P: to proceed to N3 point, maintain 2000ft, RWY in use 05, QNH 1016, 9ADVJ.

C: 9ADVJ, correct.

#### RAZGOVOR 12:

P: 9ADBR, on holding point RWY 05.

C: 9ADBR, cleared for takeoff RWY 05, wind 080/7kt.

P: cleared for takeoff RWY 05, 9ADBR.

Ispravak:

C: 9ADBR, RWY 05, cleared for takeoff, wind 080/7kt.

P: RWY 05, cleared for takeoff, 9ADBR.

RAZGOVOR 13:

P: 9ADBR, airborne at 10, turning right, proceeding to S2 point, climbing to 2500ft.

C: 9ADBR, roger, report passing 2000ft.

P: 9ADBR, wilco.

C: 9ADBR, traffic is Piper 18 inbound S1 point, will proceed to S2 point, maintaining 2500ft.

P: 9ADBR, looking out.

RAZGOVOR 14:

P: 9AMLA, N3 point, request joining instructions.

C: 9AMLA, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9AMLA.

C: 9AMLA, correct.

RAZGOVOR 15:

P: Zagreb tower, 9ABVN, inbound S1, maintaining 2500ft.

C: Station calling, say again.

P: Zagreb tower, 9ABVN, inbound S1, maintaining 2500ft.

C: 9ABVN, Zagreb tower, proceed to S2 point, maintain 2500ft, RWY in use 05, wind 080/7kt, QNH 1016.

P: to proceed to S2 point, to maintain 2500ft, RWY in use 05, QNH 1016, 9ABVN.

C: 9ABVN, traffic is Piper 18, on S2 point, proceeding to S1 point, climbing 2500ft.

P: 9ABVN, roger, looking out.

Ispravak:

C: Station calling, Zagreb tower, say again.

P: Zagreb tower, 9ABVN, inbound S1, maintaining 2500ft.

C: 9ABVN, Zagreb tower, proceed to S2 point, maintain 2500ft, RWY in use 05, wind 080/7kt, QNH 1016.

P: to proceed to S2 point, to maintain 2500ft, RWY in use 05, QNH 1016, 9ABVN.

C: 9ABVN, traffic is Piper 18, on S2 point, proceeding to S1 point, climbing 2500ft, report traffic in sight.

P: 9ABVN, roger, looking out.

RAZGOVOR 16:

P: 9AMLA, on left hand downwind RWY 05.

C: 9AMLA, roger, continue approach, report final.

P: to continue approach, wilco, 9AMLA.

RAZGOVOR 17:

P: 9ADBR, passing 2000ft.

C: 9ADBR, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 18:

P: 9AMLA, on final RWY 05.

C: 9AMLA, **cleared to land RWY 05**, wind 080/7kt.

P: **cleared to land RWY 05**, 9AMLA.

C: 9AMLA, correct.

Ispravak:

C: 9AMLA, **RWY 05, cleared to land**, wind 080/7kt.

P: **RWY 05, cleared to land**, 9AMLA.

C: 9AMLA, correct.

RAZGOVOR 19:

P: 9AMLA, landed at 15.

C: 9AMLA, roger, vacate the RWY via taxiway D, report RWY vacated.

P: to vacate the RWY via taxiway D, wilco, 9AMLA.

C: 9AMLA, correct.

RAZGOVOR 20:

P: 9AMLA, RWY vacated.

C: 9AMLA, taxi via taxiway F to the apron.

P: to taxi via taxiway F to the apron, 9AMLA.

C: 9AMLA, correct.

RAZGOVOR 21:

P: Zagreb tower, 9AKHT, general aviation apron, request joining instructions.

C: 9AKHT, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/7kt, QNH 1016.

P: to taxi via taxiway A to holding point RWY 05, QNH 1016, 9AKHT.

C: 9AKHT, correct, are you ready to copy ATC clearance?

P: 9AKHT, ready.

C: 9AKHT, cleared to Osijek via flight planned route, when airborne turn right, am, proceed to S2 point, altitude 3000ft, SQUAWK 0010.

P: cleared VFR flight to Osijek, when airborne to turn right, to proceed to S2 point, altitude 3000ft, SQUAWK 0010, 9AKHT.

C: 9AKHT, correct.

Ispravak:

C: 9AKHT, cleared VFR flight to Osijek via flight planned route, when airborne turn right, proceed to S2 point, altitude 3000ft, SQUAWK 0010.

P: cleared VFR flight to Osijek via flight planned route, when airborne to turn right, to proceed to S2 point, altitude 3000ft, SQUAWK 0010, 9AKHT.

C: 9AKHT, correct.

#### RAZGOVOR 22:

P: 9ABVN, inbound S2, altitude 2500ft, request joining instructions.

C: 9ABVN, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, 9ABVN.

#### RAZGOVOR 23:

P: 9ADVJ, inbound N3 point, request joining instructions.

C: 9ADVJ, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9ADVJ.

Ispravak:

P: to join left hand downwind RWY 05, 9ADVJ.

C: 9ADVJ, correct.

#### RAZGOVOR 24:

P: 9ABVN, on right hand downwind RWY 05.

C: 9ABVN, roger, continue approach, report final.

P: to continue approach, wilco, 9ABVN.

#### RAZGOVOR 25:

P: 9AKHT, holding point RWY 05.

C: 9A....

P: 9ADVJ, on left hand downwind RWY 05.

C: 9ADVJ, extend downwind, traffic is Piper 18 turning final RWY 05, report traffic in sight.

P: 9ADVJ, to extend left hand downwind, traffic in sight.



C: 9ADVJ, roger, number 2, follow Piper 18, report final.

P: number 2, to follow Piper 18, 9ADVJ.

Ispravak:

C: 9ADVJ, **extend left hand downwind**, traffic is Piper 18 turning final RWY 05, report traffic in sight.

P: 9ADVJ, to extend left hand downwind, traffic in sight.

RAZGOVOR 26:

C: 9AKHT, hold position.

P: to hold position, 9AKHY.

RAZGOVOR 27:

P: 9ABVN, on final RWY 05.

C: 9ABVN, cleared to land RWY 05, wind 080/7kt.

P: cleared to land RWY 05, 9ABVN.

Ispravak:

C: 9ABVN, RWY 05, cleared to land, wind 080/7kt.

P: RWY 05, cleared to land, 9ABVN.

C: 9ABVN, correct.

RAZGOVOR 28:

C: 9AKHT, traffic is Piper 18 on short final RWY 05, report traffic in sight.

P: 9AKHT, traffic in sight.

C: 9AKHT, roger, behind Piper 18 line up behind.

P: behind Piper 18 to line up behind, 9AKHT.

RAZGOVOR 29:

P: 9ABVN, landed at 24.

C: 9ABVN, roger, vacate the RWY via taxiway D, report RWY vacated.

P: to vacate the RWY via taxiway D, wilco, 9ABVN.

P: 9ABVN, RWY vacated.

C: 9ABVN, roger, taxi via taxiway F to the apron.

P: to taxi via taxiway F to the apron, 9ABVN.

C: 9ABVN, correct, break break, 9AKHT, **cleared for takeoff RWY 05**, wind 080/7kt.

P: **cleared for takeoff RWY 05**, 9AKHT.

C: 9AKHT, correct.

Ispravak:

C: 9ABVN, correct, break break, 9AKHT, RWY 05, cleared for takeoff, wind 080/7kt.

P: RWY 05, cleared for takeoff, 9AKHT.

C: 9AKHT, correct.

RAZGOVOR 30:

P: 9AKHT, airborne at 25.

C: 9AKHT, roger, report passing 2000ft.

P: 9AKHT, wilco.

RAZGOVOR 31:

P: 9ADVJ, on final RWY 05.

C: 9ADVJ, cleared to land RWY 05, wind 080/7kt.

P: cleared to land RWY 05, 9ADVJ.

Ispravak:

C: 9ADVJ, RWY 05, cleared to land, wind 080/7kt

P: RWY 05, cleared to land, 9ADVJ.

C: 9ADVJ, correct.

## **STUDENT F:**

RAZGOVOR 1:

P: Zagreb tower, 9ADAP, just departed from Lučko to Osijek, maintaining 1500ft, request low approach at Zagreb.

C: 9ADAP, Zagreb tower, am, proceed to N3 point, maintain 1500ft RWY in use 05, wind, correction, wind 120/6kt, QNH 1019.

P: to proceed to N3, maintaining 1500ft, RWY in use 05, QNH 1019, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 2:

P: 9ADAP, inbound N3, request joining instructions.

C: 9ADAP, after passing N3 point, join left hand downwind RWY 05.

P: after passing N3, to join left hand downwind RWY 05, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 3:

P: Zagreb tower, 9ADEG, at general aviation apron, request joining instructions.

C: 9ADEG, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 120/6kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 4:

P: 9ADEG, ready to copy ATC clearance.

C: 9ADEG, cleared VFR flight to Varaždin, when airborne, turn left to N3 point, climb to 3000ft, SQUAWK 0010.

P: cleared VFR flight to Varaždin, when airborne to turn left to N3 point, climb 3000ft, SQUAWK 0010, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 5:

P: 9ADAP, on left hand downwind RWY 05.

C: 9ADAP, **report final**.

P: 9ADAP, wilco.

Ispravak:

P: 9ADAP, on left hand downwind RWY 05.

C: 9ADAP, continue approach, report final **RWY 05**.

P: 9ADAP, wilco.

RAZGOVOR 6:

C: 9ADAP, after low approach, turn right to E2 point, climb to 3000ft.

P: after low approach to turn right to E2, altitude 3000ft, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 7:

P: 9ADAP, final RWY 05.

C: 9ADAP, **cleared for low approach RWY 05**, wind 120/6kt, not below 1000ft, QNH 1019.

P: **cleared for low approach RWY 05**, not below 1000ft, QNH 1019, 9ADAP.

C: 9ADAP, correct and report low approach completed.

P: 9ADAP, wilco.

Ispravak:

C: 9ADAP, **RWY 05, cleared for low approach**, wind 120/6kt, not below 1000ft, QNH 1019.

P: **RWY 05, cleared for low approach**, not below 1000ft, QNH 1019, 9ADAP.

C: 9ADAP, correct and report low approach completed.

P: 9ADAP, wilco.

RAZGOVOR 8:

P: 9ADEG, at holding point RWY 05.

C: 9ADEG, roger, hold short of RWY 05.

P: holding short of RWY 05, 9ADEG.

RAZGOVOR 9:

P: 9ADAP, low approach completed, turning right to E2, climbing to 3000ft.

C: 9ADAP, roger, report passing 2000ft.

P: 9ADAP, wilco.

RAZGOVOR 10:

C: 9ADEG, **cleared for takeoff RWY 05**, wind 120/6kt.

P: **cleared for takeoff RWY 05**, 9ADEG.

Ispravak:

C: 9ADEG, **RWY 05 cleared for takeoff**, wind 120/6kt.

P: **RWY 05 cleared for takeoff**, 9ADEG.

C; 9ADEG, correct.

RAZGOVOR 11:

P: 9ADAP, passing 2000ft.

C: 9ADAP, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 12:

P: 9ADEG, airborne at 58, turning left, proceeding to N3, climbing 3000ft.

C: 9ADEG, roger, report passing 2000ft.

P: 9ADEG, wilco.

RAZGOVOR 13:

P: Zagreb tower, 9ADAB, inbound W1, maintaining 2000ft.

C: 9ADAB, Zagreb tower, proceed to N3 point, maintain 2000ft, RWY in use 05, wind 120/6kt, QNH 1019.

P: to proceed to N3, RWY in use 05, QNH 1018, 9ADAB.

C: 9ADAB, negative, QNH 1019.

P: QNH 1019, 9ADAB.

Ispravak:

C: 9ADAB, negative, QNH 1019.

P: QNH 1019, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 14:

P: 9ADEG, passing 2000ft.

C: 9ADEG, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 15:

P: Zagreb tower, 9ACDH, inbound N1, maintaining 2000ft.

C: 9ACDG, Zagreb tower, roger, proceed to N3 point, maintain 2000ft, RWY in use 05, wind 120/6kt, QNH 1019.

P: to proceed to N3, maintaining 2000ft, RWY in use 05, QNH 1019, 9ACDH.

C: 9ACDH, correct and traffic is C172 from N3 point to N1, maintaining 2000ft.

P: 9ACDH, roger, looking out.

C: 9ACDH, that C172 is climbing to 3000ft.

P: 9ACDH, roger.

Ispravak:

C: 9ACDH, correct and traffic is C172 from N3 point to N1, maintaining 2000ft, report traffic in sight.

P: 9ACDH, roger, looking out.

C: 9ACDH, correction, C172 is climbing to altitude 3000ft.

P: 9ACDH, roger.

RAZGOVOR 16:

P: 9ADAB, inbound N3, request joining instructions.

C: 9ADAB, **after** N3, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9ADAB.

Ispravak:

C: 9ADAB, **after passing N3**, join left hand downwind RWY 05.

P: after passing N3, to join left hand downwind RWY 05, 9ADAB.

RAZGOVOR 17:

P: Zagreb tower, S8DET, S1, maintaining 2500ft.

C: S8DET, Zagreb radar, correction, Zagreb tower, am, proceed to S2 point, maintaining 2500ft, RWY in use 05, wind 120/6kt, QNH 1019.

P: to proceed to S2, maintaining 2500ft, RWY in use 05, QNH 1019, S8DET.

C: S8DET, correct.

RAZGOVOR 18:

P: 9ADAB, left hand downwind RWY 05.

C: 9ADAB, continue approach, report final RWY 05.

P: continue approach, wilco, 9ADAB.

RAZGOVOR 19:

P: Zagreb tower, 9ADBR, on general aviation apron, request taxi instructions.

C: 9ADBR, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 120/6kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ADBR.

C: 9ADBR, correct, and, am, report ready to copy ATC.

P: 9ADBR, wilco.

RAZGOVOR 20:

P: 9ADAB, final RWY 05.

C: 9ADAB, cleared to land RWY 05, wind 120/6kt.

P: cleared to land RWY 05, 9ADAB.

Ispravak:

C: 9ADAB, RWY 05, cleared to land, wind 120/6kt.

P: RWY 05, cleared to land, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 21:

P: 9ADAB, landed at 09.

C: 9ADAB, roger, vacate via C, report RWY vacated.

P: vacate via C, wilco, 9ADAB.

Ispravak:

C: 9ADAB, roger, vacate the RWY via taxiway C, report RWY vacated.

P: vacate via C, wilco, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 22:

P: 9ADAB, RWY vacated.

C: 9ADAB, roger, goodbye.

RAZGOVOR 23:

P: 9ADBR, ready to copy ATC clearance.

C: 9ADBR, cleared VFR flight to Sinj, when airborne turn right, proceed to S2, climb to 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right, to proceed to S2, altitude 2500ft, SQUAWK 0051, 9ADBR.

C: 9ADBR, negative, SQUAWK 0015.

P: SQUAWK 0015, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 24:

P: 9ACDH, inbound N3, request joining instructions.

C: 9ACDH, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9ACDH.

C: 9ACDH, correct.

RAZGOVOR 25:

P: 9ADBR, at holding point RWY 05.

C: 9ADBR, cleared for takeoff RWY 05, wind 120/6kt.

P: cleared for takeoff RWY 05, 9ADBR.

C: 9ADBR, correct.

Ispravak:

C: 9ADBR, RWY 05 cleared for takeoff, wind 120/6kt.

P: RWY 05 cleared for takeoff, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 26:

C: S8DET, traffic is C150 just departed, correction, Piper 18, just departing RWY 05, proceeding to S2 point, climbing 2500ft.

P: S8DET, roger, looking out.

RAZGOVOR 27:

P: 9ADBR, airborne at 12, turning right, proceeding to S2, climbing 2500ft.

C: 9ADBR, roger, traffic is C172 from S1 to S2 point, maintaining 2500ft and report passing 2000ft.

P: 9ADBR, roger, looking out, wilco.

Ispravak:

C: 9ADBR, roger, traffic is C172 from S1 to S2 point, maintaining 2500ft and report traffic in sight and passing 2000ft.

P: 9ADBR, roger, looking out, wilco.

RAZGOVOR 28:

C: 9ACDH, proceed to final RWY 05.

P: to proceed to final RWY 05, 9ACDH.

Ispravak:

C: 9ACDH, proceed to final RWY 05.

P: to proceed to final RWY 05, 9ACDH.

C: 9ACDH, correct.

RAZGOVOR 29:

C: S8DET, after passing S2, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, S8DET.

Ispravak:

C: S8DET, after passing S2, join right hand downwind RWY 05.

P: to join right hand downwind RWY 05, S8DET.

C: S8DET, correct.

RAZGOVOR 30:

P: 9ACDH, final RWY 05.

C: 9ACDH, cleared to land RWY 05, wind 120/6kt.

P: cleared to land RWY 05, 9ACDH.

Ispravak:

C: 9ACDH, RWY 05 cleared to land, wind 120/6kt.

P: RWY 05 cleared to land, 9ACDH.

C: 9ACDH, correct.



RAZGOVOR 31:

P: 9ADBR, passing 2000ft.

C: 9ADBR, contact Zagreb radar on 120.7.

P: 120.7, 9ADBR.

C: 9ADBR, correct, bye.

RAZGOVOR 32:

P: 9ACDH, landed at 14

C: 9ACDH, roger, vacate via C, report RWY vacated.

P: vacate via C, wilco, 9ACDH.

Ispravak:

C: 9ACDH, roger, vacate the RWY via taxiway C, report RWY vacated.

P: vacate the RWY via taxiway C, wilco, 9ACDH.

C: 9ACDH, correct.

## STUDENT G:

RAZGOVOR 1:

P: Zagreb tower, 9ABMF, VFR flight from Lučko to Osijek, request low approach at Zagreb, altitude 1500ft.

C: 9ABMF, Zagreb tower, roger, proceed to N3, at 1500ft, RWY 05, wind 080/13kt, am.

P: to proceed to N3 point, RWY 05, 9ABMF.

C: 9AB, correction, 9ABMF, correct.

Ispravak:

C: 9ABMF, Zagreb tower, roger, proceed to N3 point, altitude 1500ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to proceed to N3 point, RWY in use 05, QNH 1019, 9ABMF.

C: 9ABMF, correct.

RAZGOVOR 2:

P: Zagreb tower, 9AMLA, W1, 2000ft.

C: 9AMLA, roger, proceed to N3 point, altitude 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to proceed to N3 point, altitude 2000ft, RWY in use 05, QNH 1019, 9AMLA.

C: 9AMLA, correct.

Ispravak:

C: 9AMLA, Zagreb tower, roger, proceed to N3 point, altitude 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

RAZGOVOR 3:

C: 9AMLA, traffic is C150, am, from Lučko to N3 point, at 1500ft, report traffic in sight.

P: 9AMLA, roger, looking out.

C: 9AMLA, correct.

RAZGOVOR 4:

P: 9ABMF, N3 point, altitude 1500ft.

C: 9ABMF, roger, after low approach, turn right, proceed to E2 point, climb to 3000ft, SQUAWK 0016.

P: after low approach turn right, proceed to E2 point, altitude 3000ft, SQUAWK 0016 and request joining instructions 9ABMF.

C: 9ABMF, correct, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9ABMF.

C: 9ABMF, correct, **report final**

P: 9ABMF, wilco.

Ispravak:

C: 9ABMF, correct, **report final RWY 05.**

P: 9ABMF, wilco.

RAZGOVOR 5:

C: 9ABMF, **cleared for low approach RWY 05**, wind 080/13kt, not below 1000ft, QNH 1019.

P: **cleared for low approach RWY 05**, not below 1000ft, QNH 1019, 9ABMF.

C: 9ABMF, correct.

Ispravak:

C: 9ABMF, **RWY 05, cleared for low approach**, wind 080/13kt, not below 1000ft, QNH 1019.

P: **RWY 05, cleared for low approach**, not below 1000ft, QNH 1019, 9ABMF.

C: 9ABMF, correct.

RAZGOVOR 6:

P: Zagreb tower, 9ADBR, VFR flight to Sinj, request taxi instructions.

C: 9ADBR, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: via taxiway A to holding point RWY 05, QNH 1019, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 7:

P: 9AMLA, inbound N3 point, altitude 2000ft.

C: 9AMLA, roger, join left hand downwind RWY 05.

C: 9AML , correction, 9AMLA, traffic is C150 on **final** for low approach at 1000ft, report traffic in sight.

P: to join left hand downwind RWY 05, traffic in sight, 9AMLA.

C: 9AMLA, correct, number 2, follow C150.

P: number 2, to follow C150, 9AMLA.

C: 9AMLA, correct, **report final**.

P: 9AMLA, wilco.

Ispravak:

C: 9AML, correction, 9AMLA, traffic is C150 on **final RWY 05** for low approach at 1000ft, report traffic in sight.

P: to join left hand downwind RWY 05, traffic in sight, 9AMLA.

C: 9AMLA, correct, number 2, follow C150.

P: number 2, to follow C150, 9AMLA.

C: 9AMLA, correct, **report final RWY 05**.

P: 9AMLA, wilco.

#### RAZGOVOR 8:

P: 9ABMF, low approach completed, turning right, proceeding to E2 point, climbing 3000ft.

C: 9ABMF, roger, report passing 2000ft.

P: 9ABMF, wilco.

#### RAZGOVOR 9:

P: 9AMLA, left hand downwind RWY 05.

C: 9AMLA, roger, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, 9AMLA.

C: 9AMLA, correct.

Ispravak:

C: 9AMLA, roger, **RWY 05 cleared to land**, wind 080/13kt.

P: **RWY 05 cleared to land**, 9AMLA.

C: 9AMLA, correct.

#### RAZGOVOR 10:

P: 9ADBR, ready to copy ATC clearance.

C: 9ADBR, cleared VFR flight to Sinj, when airborne, turn right to S2 point, climb to 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right to S2 point, altitude 2500ft, SQUAWK 0015, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 11:

P: 9ADBR, holding point RWY05.

C: 9ADBR, roger, traffic is C150 on final RWY 05, report traffic in sight.

P: traffic in sight, 9ADBR.

C: 9ADBR, behind C150 line up behind.

P: behind C150 to line up behind, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 12:

P: 9AMLA, landed at 10.

C: 9AMLA, vacate the RWY via taxiway D, taxi via taxiway F to the apron, report RWY vacated.

P: to vacate the RWY via taxiway D and F to the apron, wilco, 9AMLA.

Ispravak:

P: to vacate the RWY via taxiway D and F to the apron, wilco, 9AMLA.

C: 9AMLA, correct.

RAZGOVOR 13:

P: 9ABMF, passing 2000ft.

C: 9AB, correction, 9ABMF, contact Zagreb radar on 120.7.

P: 120.7, 9ABMF.

C: 9ABMF, correct.

RAZGOVOR 14:

P: 9ADBR, lining up RWY 05.

C: 9ADBR, roger, standby.

RAZGOVOR 15:

P: Zagreb tower, 9ADVJ, inbound N1 point, altitude 2000ft.

C: 9A, correction, **9ADVJ**, proceed to N3 point, at 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to proceed to N3 point, altitude 2000ft, RWY in use 05, QNH 1019, 9ADVJ.

C: 9AD, correction, 9ADVJ, correct.

Ispravak:

P: **Zagreb tower**, 9ADVJ, inbound N1 point, altitude 2000ft.

C: 9A, correction, 9ADVJ, Zagreb tower, proceed to N3 point, at 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

RAZGOVOR 16:

P: 9AMLA, RWY vacated.

C: 9AMLA, roger.

RAZGOVOR 17:

C: 9ADBR, cleared for takeoff RWY 05, wind 080/13kt.

P: cleared for takeoff RWY 05, 9ADBR.

C: 9ADBR, correct, report RWY, correction, report airborne.

P: 9ADBR, wilco.

Ispravak:

C: 9ADBR, RWY 05, cleared for takeoff, wind 080/13kt.

P: RWY 05, cleared for takeoff, 9ADBR.

C: 9ADBR, correct, report RWY, correction, report airborne.

P: 9ADBR, wilco.

RAZGOVOR 18:

P: 9ABVN, correction, Zagreb tower, 9ABVN, inbound S1 point, altitude 25000ft.

C: 9ABVN, Zagreb tower, proceed to S2 point, altitude 2500ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to proceed to S2 point, altitude 2500ft, RWY in use 05, QNH 1019, 9ABVN.

C: 9ABVN, correct.

RAZGOVOR 19:

P: 9ADBR, airborne at 12, turning right, proceeding to S2 point, climbing to altitude 25000ft.

C: 9ADBR, roger, report passing 2000ft.

P: 9ADBR, wilco.

RAZGOVOR 20:

C: 9ABVN, traffic is Piper 18, just departed from RWY 05, proceeding to S2 point, climbing, correction, climbing to 2500ft.

P: 9ABVN, roger, looking out, descending to 2000ft.

C: 9ADBR, correct.

Ispravak:

P: 9ABVN, roger, looking out, descending to 2000ft.

C: 9ABVN, correct.

RAZGOVOR 21:

C: 9ADBR, traffic is Piper 18, from S2, correction, from S1 to S2 point, at 2000ft, report traffic in sight.

P: 9ADBR, roger, looking out.

RAZGOVOR 22:

P: 9ADBR, passing 2000ft.

C: 9ADBR, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 23:

P: 9ADVJ, inbound N3 point, altitude 2000ft.

C: 9ADVJ, join left hand downwind RWY 05, **report final**.

P: to join left hand downwind RWY 05, wilco, 9ADVJ.

C: 9A, correction, 9ADVJ, correct.

Ispravak:

C: 9ADVJ, join left hand downwind RWY 05, report final RWY 05.

P: to join left hand downwind RWY 05, wilco, 9ADVJ.

C: 9A, correction, 9ADVJ, correct.

RAZGOVOR 24:

P: Zagreb tower, 9AKHT, VFR flight to Osijek, request taxi instructions.

C: 9AKHT, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: taxi via taxiway A to holding point RWY 05, RWY in use 05, QNH 1019, 9AKHT.

C: 9AKHT, correct.

RAZGOVOR 25:

C: 9A, correction, 9ADVJ, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, 9ADVJ.

C: 9A, correction, 9ADVJ, correct.

Ispravak:

C: 9A, correction, 9ADVJ, **RWY 05 cleared to land**, wind 080/13kt.

P: **RWY 05 cleared to land**, 9ADVJ.

C: 9A, correction, 9ADVJ, correct.

RAZGOVOR 26:

P: 9ABVN, inbound S2 point, altitude 2000ft.

C: 9ABVN, join left, correction, join right hand downwind RWY 05, traffic is C172 on final RWY 05, report traffic in sight.

P: to join right hand downwind RWY 05, traffic in sight, 9ABVN.

C: 9ABVN, correct.

RAZGOVOR 27:

C: 9ABVN, number 2, follow C172.

P: number 2, to follow C172, 9ABVN.

C: 9ABVN, correct.

RAZGOVOR 28:

P: 9AKHT, ready to copy ATC clearance.

C: 9AKHT, cleared VFR flight to Osijek, when airborne, turn right, proceed to E2 point, altitude 3000ft, SQUAWK 0010.

P: cleared VFR flight to Osijek, when airborne to turn right, to proceed to E2 point, altitude 3000ft, SQUAWK 0010, 9AKHT.

RAZGOVOR 29:

P: 9ADVJ, landed at 21.

C: 9ADVJ, vacate the RWY via taxiway C, taxi via taxiway F to the apron.

P: to vacate the RWY via taxiway C and F to the apron, 9ADVJ.

C: 9ADVJ, report RWY vacated, correct.

P: 9ADVJ, wilco.

Ispravak:

C: 9ADVJ, correct, report RWY vacated.

P: 9ADVJ, wilco.

RAZGOVOR 30:

P: 9AKHT, holding point RWY 05.

C: 9AKHT, traffic is Piper 18 on final RWY 05, report traffic in sight.

P: traffic in sight, 9AKHT.

C: 9AKHT, behind Piper 18 line up behind.

P: behind Piper 18 to line up behind, 9AKHT.

C: 9AKHT, correct.

RAZGOVOR 31:

P: 9ADVJ, RWY vacated.

C: 9ADVJ, roger.

RAZGOVOR 32:

P: 9ABVN, on final RWY 05.

C: 9ABVN, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, 9ABVN.

C: 9ABVN, correct.

Ispravak:

C: 9ABVN, **RWY 05 cleared to land**, wind 080/13kt.

P: **RWY 05 cleared to land**, 9ABVN.

C: 9ABVN, correct.

RAZGOVOR 33:

P: 9ABVN, landed at 23.

C: 9ABVN, vacate the RWY via taxiway C, taxi via taxiway F to the apron, report RWY vacated.

P: via taxiway C and F to the apron, wilco, 9ABVN.

C: 9ABVN, correct.

RAZGOVOR 34:

P: 9AKHT, lining up RWY 05.

C: 9A, correction, 9AKHT, roger, standby.

RAZGOVOR 35:

P: 9ABVN, RWY vacated.

C: 9ABVN, roger.

RAZGOVOR 36:

C: 9AKHT, **cleared for takeoff RWY 05**, wind 080/13kt, report airborne.

P: **cleared for takeoff RWY 05**, wilco, 9AKHT.

Ispravak:



C: 9AKHT, RWY 05, cleared for takeoff, wind 080/13kt, report airborne.

P: RWY 05, cleared for takeoff, wilco, 9AKHT.

C: 9AKHT, correct.

## STUDENT H:

### RAZGOVOR 1:

P: Zagreb tower, 9ADAP, correction, departed from Lučko to Osijek, request low approach at Zagreb and maintaining 1500ft.

C: 9ADAP (krivo papa izgovor), Zagreb tower, proceed to N3 at 1500ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to N3 point at, QNH 1019, RWY in use 1500ft, 9ADAP.

C: 9ADAP, correct.

### RAZGOVOR 2:

P: Zagreb tower, 9ADEG, at general aviation apron, VFR flight to Varaždin, request taxi instructions.

C: 9ADEG, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ADEG.

C: 9ADEG, correct.

### RAZGOVOR 3:

P: 9ADAP, passing N3 point, request joining instructions

C: 9ADAP, join left hand downwind RWY 05.

P: to join left hand downwind RWY 05, 9ADAP.

C: 9ADAP, after low approach proceed to E2 point, turn left, correction, turn right, proceed to E2, at 3000ft, SQUAWK 0001.

P: after low approach to proceed to E2 point, to turn right, to proceed to E2, 3000ft, SQUAWK 0001, 9ADAP.

C: 9ADAP, correct.

### RAZGOVOR 4:

P: 9ADEG, ready to copy ATC clearance.

C: 9ADEG, cleared VFR flight to Varaždin, when airborne turn right to N3 point, at, am, correction, climb to 3000ft, SQUAWK 0010.

P: cleared VFR flight to Varaždin, when airborne to turn right to N3 point, climb to 3000ft, SQUAWK 0010, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 5:

C: 9ADEG, recleared, when airborne turn left, proceed to N3 point.

P: when airborne to turn left, to proceed to N3 point, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 6:

P: 9ADAP, turning final RWY 05.

C: 9ADAP, **cleared low approach RWY 05**, not below 1000ft, QNH 1019.

P: **cleared low approach RWY 05**, not below 1000ft, QNH 1019, 9ADAP.

C: 9ADAP, correct.

Ispravak:

C: 9ADAP, **RWY 05, cleared low approach**, wind 080/13kt, not below 1000ft, QNH 1019.

P: **RWY 05, cleared low approach**, not below 1000ft, QNH 1019, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 7:

P: 9ADEG, at holding point RWY 05, ready for departure.

C: 9ADEG, hold position.

P: holding position, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 8:

C: 9ADEG, traffic is C172 on final RWY 05, report traffic in sight.

P: 9ADEG, traffic in sight.

C: 9ADEG, roger, behind C172 line up behind.

P: lining up behind, 9ADEG.

RAZGOVOR 9:

P: 9ADAP, approach completed, climbing 3000ft, turning to E3, correction, turning to E2 point.

C: 9ADAP, roger, report passing 3000ft.

P: 9ADAP, wilco.

RAZGOVOR 10:

~~C: 9ADEG, negative.~~

RAZGOVOR 11:

C: 9ADEG, cleared for takeoff RWY 05, wind 080/13kt.

P: cleared for takeoff RWY 05, 9ADEG.

C: 9ADEG, correct.

Ispravak:

C: 9ADEG, RWY 05, cleared for takeoff, wind 080/13kt.

P: RWY 05, cleared for takeoff, 9ADEG.

C: 9ADEG, correct.

RAZGOVOR 12:

P: 9ADEG, airborne at 59.

C: 9ADEG, roger, report passing 3000ft, am.

RAZGOVOR 13:

C: 9ADEG, roger, report passing 3000ft.

P: 9ADEG, wilco.

RAZGOVOR 14:

P: Zagreb tower, 9ADAB, VFR flight from Grobnik to Zagreb, passing W1 point, maintaining 2000ft.

C: 9ADAB, Zagreb tower, roger, proceed to N3, at 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to N3 point, at 2000ft, RWY in use 05, QNH 1019, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 15:

P: 9ADAP (krivi papa izgovor), reaching 3000ft.

C: 9ADAP, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ADAP.

C: 9ADAP, correct.

RAZGOVOR 16:

P: Zagreb tower, 9ACDH, passed N1 point, inbound N3 point, VFR flight from Varaždin to Zagreb, maintaining 2000ft.

C: Station calling, Zagreb tower, say again.

P: Zagreb tower, 9ACDH, passed N1 point, inbound N3 point, VFR flight from Varaždin to Zagreb, maintaining 2000ft.

C: 9ACDH, roger, am, proceed to N3 point, at 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to N3 point, at 2000ft, RWY in use 05, QNH 1019, 9ACDH.

C: 9ACDH, correct, am, traffic is C210 from N3 to N1 at 2000ft, report traffic in sight.

P: 9ACDH, roger, looking out.

Ispravak:

P: Zagreb tower, 9ACDH, passed N1 point, inbound N3 point, VFR flight from Varaždin to Zagreb, maintaining 2000ft.

C: 9ACDH, Zagreb tower, roger, proceed to N3 point, at 2000ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to N3 point, at 2000ft, RWY in use 05, QNH 1019, 9ACDH.

C: 9ACDH, correct, traffic is C210 from N3 to N1 at 2000ft, report traffic in sight.

P: 9ACDH, roger, looking out.

#### RAZGOVOR 17:

C: 9ACDH, correction, traffic is C172 from N3 to N1 at 3000ft, report traffic in sight.

P: traffic in sight, 9ACDH.

#### RAZGOVOR 18:

C: 9ADEG, traffic is C150 from N1 to N3 at 2000ft, report traffic in sight.

P: 9ADEG, traffic in sight.

#### RAZGOVOR 19:

P: Zagreb tower, S8DET, inbound S1 point, VFR flight from Sinj to Zagreb, maintaining 2500ft.

C: S8DET, Zagreb tower, proceed to S2 point, at 2500ft, RWY in use 05, wind 080/13kt, QNH 1019.

P: to S2 point, maintaining 2500ft, RWY in use 05, QNH 1019, S8DET.

C: S8DET, correct.

#### RAZGOVOR 20:

P: 9ADEG, reached 3000ft.

C: 9ADEG, roger, contact Zagreb radar on 120.7.

P: 120.7, 9ADEG, bye.

C: 9ADEG, correct.

#### RAZGOVOR 21:

C: 9ADAB, traffic is C150 from N1 to N3, at 2000ft, report traffic in sight.

P: 9ADAB, roger, looking out.

RAZGOVOR 22:

C: 9ACDH, traffic is C210 from W1 to N3, **report traffic in sight, at 2000ft.**

P: 9ACDH, roger, looking out.

Ispravak:

C: 9ACDH, traffic is C210 from W1 to N3, **at 2000ft, report traffic in sight.**

P: 9ACDH, roger, looking out.

RAZGOVOR 23:

P: Zagreb tower, 9ADBR, general aviation apron, VFR flight to Sinj, request taxi instructions.

C: 9ADBR, Zagreb tower, taxi via taxiway A to holding point RWY 05, wind 080/13kt, QNH 1019.

P: to taxi via taxiway A to holding point RWY 05, QNH 1019, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 24:

P: 9ACDH, traffic in sight.

C: 9ADBR, are you ready to copy ATC clearance?

P: 9ADBR, affirm.

C: 9ADBR, cleared VFR flight to Sinj, when airborne turn right, correction, **turn right**, climb to 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right, to climb to 2500ft, SQUAWK 0015 and request point, 9ADBR.

C: 9ADBR, **correct.**

Ispravak:

C: 9ADBR, cleared VFR flight to Sinj, **when airborne turn right**, proceed to S2 point, climb to 2500ft, SQUAWK 0015.

P: cleared VFR flight to Sinj, when airborne to turn right, to proceed to S2 point, to climb to 2500ft, SQUAWK 0015, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 25:

P: 9ADAB, passing N3 point, request joining instructions.

C: 9ADAB, join left hand downwind RWY 05.

P: joining left hand downwind RWY 05, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 26:

P: 9ADBR, request point after turning right when airborne.

C: 9ADBR turn right to S1

P: roger, S1, 9ADBR.

RAZGOVOR 27:

C: 9ADAB, cleared to land RWY 05, wind 080/13kt.

P: cleared to land RWY 05, 9ADAB.

C: 9ADAB, correct.

Ispravak:

C: 9ADAB, RWY 05, cleared to land, wind 080/13kt.

P: RWY 05, cleared to land, 9ADAB.

C: 9ADAB, correct.

RAZGOVOR 28:

P: 9ADBR, at holding point RWY 05.

C: 9ADBR, roger, hold position.

P: holding position, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 29:

P: 9ADAB, turning final RWY 05.

C: 9ADAB, roger.

RAZGOVOR 30:

P: 9ACDH, passed N3 point, request joining instructions.

C: 9ACDH, orbit to the right from present position.

P: orbiting to the right from present position, 9ACDH.

C: 9ACDH, roger, correct.

RAZGOVOR 31:

P: 9ADAB, landed at 13.

C: 9ADAB, roger, vacate the RWY via taxiway C, report RWY vacated.

P: to vacate the RWYH via taxiway C, wilco, 9ADAB.

C: 9ADAB correct.

RAZGOVOR 32:

P: S8DET, passed S2 point, request joining instructions.

C: Station calling, Zagreb tower, say again.

P: S8DET, passed S2 point, request joining instructions.

C: S8DET, join right hand downwind RWY 05.

P: joining right hand downwind RWY 05, S8DET.

C: S8DET, correct.

RAZGOVOR 33:

P: 9ADAB, RWY vacated.

C: 9ADBR, traffic is C172 on right hand downwind RWY 05, report traffic in sight.

P: 9ADBR, traffic in sight.

C: 9ADBR, roger, behind C172 line up behind.

P: behind C172 to line up behind, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 34:

C: S8DET, report position.

P: S8DET, turning right hand base.

C: S8DET, **cleared to land RWY 05**, wind 080/13kt.

P: **cleared to land RWY 05**, S8DET.

C: S8DET, correct.

Ispravak:

C: S8DET, **RWY 05, cleared to land**, wind 080/13kt.

P: **RWY 05, cleared to land**, S8DET.

C: S8DET, correct.

RAZGOVOR 35:

P: S8DET, turning final RWY 05.

C: S8DET, roger.

RAZGOVOR 36:

C: 9ACDH, **am**, standby.

C: 9ACDH, **am**, stop orbiting, continue approach RWY 05, join left hand downwind RWY 05.

P: joining left hand downwind RWY 05, 9ACDH.

C: 9ACDH, correct.

RAZGOVOR 37:

P: S8DET, landed at 17.

C: S8DET, roger, vacate the RWY via taxiway C, report RWY vacated.

P: to vacate the RWY via taxiway C, wilco, S8DET.

C: S8DET, roger, correct.

RAZGOVOR 38:

P: 9ADBR, lined up RWY 05.

C: 9ACDH, am, standby.

P: that was 9ADBR.

C: station calling, Zagreb tower, say again.

P: 9ADBR, lined up RWY 05.

C: S8DET, report position.

P: S8DET, still vacating the RWY.

C: 9ACDH, extend left hand downwind RWY 05.

P: extending left hand downwind RWY 05.

RAZGOVOR 39:

P: S8DET, RWY vacated.

C: 9ADBR, cleared for takeoff RWY 05, wind 080/13kt.

P: cleared for takeoff RWY 05, 9ADBR.

C: 9ADBR, correct.

Ispravak:

C: 9ADBR, RWY 05, cleared for takeoff, wind 080/13kt.

P: RWY 05, cleared for takeoff, 9ADBR.

C: 9ADBR, correct.

RAZGOVOR 40:

C: S8DET, am, taxi via taxiway F to the apron.

P: S8DET, taxi via taxiway F to the apron, bye.

C: S8DET, correct, bye.

RAZGOVOR 41:



P: 9ADBR, airborne at 19.

C: 9ADBR, roger, report passing 2500ft.

P: 9ADBR, wilco.

RAZGOVOR 42:

C: 9ACDH, am, join left hand base RWY 05.

P: joining left hand base RWY 05, 9ACDH.

C: 9ACDH, roger, report final RWY 05.

P: 9ACDH, wilco.

## Prilog 2. Transkript razgovora studenata pilota

U navedenome prilogu nalaze se svi transkripti razgovora studenata pilota u stvarnom aerodromskom zračnom prostoru. Slovom P označene su transmisije studenta pilota, a slovom C kontrole zračnog prometa. U snimanju su sudjelovala tri studenta te je snimljen jedan let po studentu. Netočni dijelovi rečenice su označeni s crvenom bojom te su ispravljeni i prikazani zelenom bojom ispod razgovora. Ispravni razgovori između studenta pilota i kontrole zračnog prometa su samo transkribirani.

### STUDENT A:

#### RAZGOVOR 1:

P: Lučko tower, 9ADMB, request startup for local VFR flight.

C: 9ADMB, Lučko tower, startup approved, QNH 1017.

P: startup approved, QNH 1017, 9ADMB.

#### RAZGOVOR 2:

P: 9ADMB, request taxi.

C: 9ADMB, taxi holding point C, RWY 10R.

P: (~~to~~) taxi holding point C RWY 10(~~R~~), 9ADMB

Ispravak:

P: ~~to~~ taxi to holding point C RWY 10R, 9ADMB.

#### RAZGOVOR 3:

P: 9ADMB, ready to copy ATC clearance.

C: 9ADMB, cleared local flight via flight planned route, 1500ft, when airborne N3 point, SQUAWK 3674.

P: cleared for local VFR flight via flight planned route, 1500ft, when airborne N3 point and SQUAWK 3674, 9ADMB.

C: 9ADMB, correct.

#### RAZGOVOR 4:

P: 9ADMB, ready for departure.

C: 9MB, cleared for takeoff, 10R, wind 300/3kt

P: ~~cleared for takeoff~~ RWY 10R, 9ADMB.

Ispravak:

P: RWY 10R, cleared for takeoff, 9ADMB.

RAZGOVOR 5:

C: 9MB, Zagreb tower 118.3.

P: 118.3, 9MB, do slušanja.

RAZGOVOR 6:

P: Zagreb tower, 9ADMB, inbound N3, 1500ft.

C: 9ADMB, Zagreb tower, RWY in use 04, QNH 1017, report N3.

P: RWY 04, QNH 1017, wilco, 9MB, (~~correction~~), 9ADMB.

Ispravak:

P: RWY in use 04, QNH 1017, wilco, 9MB, correction, 9ADMB.

RAZGOVOR 7:

C: 9ADMB, you will be number 2 or number 3, expect holding overhead N3.

P: 9ADMB, roger.

Ispravak:

P: number 2 or number 3, roger, 9ADMB.

RAZGOVOR 8:

P: 9ADMB, N3, am, 1500ft, inbound Zagreb for touch and go.

C: 9ADMB, roger, orbit to the left overhead N3, call you back for approach, expect approach in about 4 or 5 minutes.

P: orbiting to the left, roger, 9ADMB.

Ispravak:

P: orbiting to the left overhead N3, roger, 9ADMB.

RAZGOVOR 9:

C: 9ADMB, traffic is Airbus 320 final 04, report in sight.

P: 9ADMB, traffic in sight.

C: 9ADMB, roger, join left hand downwind 04, follow as number 2, behind Airbus, caution wake turbulence.

P: to join left hand downwind (~~RWY 04~~), am, roger, 9ADMB.

Ispravak:

P: to join left hand downwind RWY 04, following as number 2, roger, 9ADMB.

RAZGOVOR 10:

C: 9ADMB, report final 04 and confirm performing touch and go.

P: 9ADMB, wilco, affirm.

C: 9ADMB, after touch and go, requested level to K4?

P: 9ADMB, 4000ft.

C: 9ADMB, roger, after touch and go turn left to N3, K4 next, 1000ft AGL initially.

P: 9ADMB, say again.

C: 9ADMB, after touch and go turn left, proceed to N3, K4 next, 1000ft AGL.

P: after touch and go to turn left, N3, K4, 1000ft AGL.

C: 9ADMB, correct, cleared for touch and go RWY 04, wind 070/10, gusting 20kt.

P: cleared for touch and go RWY 04, 9ADMB.

Ispravak:

P: after touch and go to turn left, to proceed to N3, K4 next, 1000ft AGL.

C: 9ADMB, correct, cleared for touch and go RWY 04, wind 070/10, gusting 20kt.

P: RWY 04, cleared for touch and go, 9ADMB.

RAZGOVOR 11:

C: 9ADMB, if convient, proceed direct to K4.

P: to proceed direct to K4, 9ADMB.

RAZGOVOR 12:

C: 9ADMB, contact Zagreb radar on 120.7.

P: 120.7, 9ADMB.

RAZGOVOR 13:

P: Lučko tower, 9ADMB, N2, 2000ft, inbound Lučko for landing.

C: 9ADMB, QNH 1016, report P3.

P: QNH 1016, wilco, 9ADMB.

RAZGOVOR 14:

P: 9ADMB, P3, 2000ft.

C: 9MB, join left hand base leg RWY 10R.

P: to join left hand base leg RWY 10R, 9ADMB.

RAZGOVOR 15:

C: 9MB, traffic is C150 on right base leg for RWY 10R, report traffic in sight.

P: 9ADMB, looking out.

RAZGOVOR 16:

C: 9MB, traffic on final, you are number 2, report final.

P: number 2, wilco, 9ADMB.

P: 9ADMB, traffic in sight.

C: 9ADMB, roger, hold separation.

P: 9ADMB, wilco.

RAZGOVOR 17:

P: 9ADMB, turning final RWY 10R, for landing.

C: 9ADMB, expect landing clearance.

P: 9ADMB, roger.

RAZGOVOR 18:

C: 9AMB, cleared to land 10R, wind 090/10kt.

P: **cleared to land RWY 10R**, 9ADMB.

Ispravak:

P: **RWY 10R, cleared to land**, 9ADMB.

RAZGOVOR 19:

C: 9MB, via D taxi to the apron.

P: vacating via D and taxiing to the apron, 9ADMB.

RAZGOVOR 20:

P: 9ADMB, engine shutdown.

C: 9ADMB, roger.

**STUDENT B:**

RAZGOVOR 1:

P: Lučko tower, **9AD**, request startup for VFR flight.

C: 9ADAD, Lučko tower, startup approved, QNH 1026.

P: startup approved. QNH 1026, 9ADAD.

Ispravak:

P: Lučko tower, 9ADAD, request startup for VFR flight.

RAZGOVOR 2:

P: 9ADAD, ready to taxi.

C: 9ADAD, taxi to holding point E RWY 28L

P: taxiing to holding point E RWY 28L, 9ADAD.

RAZGOVOR 3:

P: 9ADAD, ready to copy ATC clearance.

C: 9ADAD, cleared VFR flight to LDOV, 1000ft AGL, when airborne right turn to N3.

P: 9ADAD, and squawk?

C: 9ADAD, call you back later for SQUAWK.

P: cleared VFR flight to LDOV, when airborne 1000ft inbound N3, 9ADAD.

C: 9ADAD, correct, report ready.

P: 9ADAD, wilco.

Ispravak:

P: cleared VFR flight to LDOV, 1000ft AGL, when airborne to turn right, to proceed N3 point, 9ADAD.

RAZGOVOR 4:

C: 9ADAD, SQUAWK 0012.

P: SQUAWK 0012, 9ADAD.

C: 9ADAD, correct.

RAZGOVOR 5:

P: 9ADAD, ready for departure.

C: 9ADAD, cleared for takeoff RWY 28L, wind 300/7kt.

P: cleared for takeoff RWY 28L, 9ADAD.

Ispravak:

P: RWY 28L, cleared for takeoff, 9ADAD.

RAZGOVOR 6:

C: 9AD, recleared, when airborne left turn to N3.

P: recleared, left turn to N3, 9ADAD.

RAZGOVOR 7:

C: 9ADAD, traffic information, Mi-8 helicopter departed from Lučko, inbound N3, 1000ft AGL.

P: 9ADAD, looking out.

P: 9ADAD, traffic in sight.

C: 9AD, climb 2000ft inbound N3

P: climbing 2000ft inbound N3, 9ADAD.

#### RAZGOVOR 8:

C: 9ADAD, contact Zagreb tower on 118.3.

P: 118.3, 9ADAD.

#### RAZGOVOR 9:

P: Zagreb tower, 9ADAD, inbound N3, just departed Lučko, 2000ft.

C: 9ADAD, Zagreb tower, RWY in use 04, QNH 1026, report overhead N3.

P: RWY in use 04, QNH 1026, wilco, 9ADAD.

Ispravak:

P: Zagreb tower, 9ADAD, just departed Lučko, inbound N3, 2000ft.

#### RAZGOVOR 10:

P: 9ADAD, N3, 2000ft, inbound S2.

C: 9ADAD, roger, orbit overhead N3.

P: orbiting overhead N3, 9ADAD.

#### RAZGOVOR 11:

C: 9ADAD, report next point after S2

P: 9ADAD, it is E2.

C: 9ADAD, roger, cleared to cross RWY track and report S2.

P: cleared to cross RWY, wilco, 9ADAD.

#### RAZGOVOR 12:

P: 9ADAD, S2, 2000ft, inbound E2.

C: 9ADAD, roger, proceed to E2, 2000ft, QNH 1026.

P: QNH 1026, 9ADAD.

C: 9ADAD, proceed to E2.

P: proceeding to E2, 9ADAD.

Ispravak:

P: to proceed to E2, 2000ft, QNH 1026, 9ADAD.

RAZGOVOR 13:

C: 9ADAD, contact Zagreb radar on 120.7.

P: 120.7, 9ADAD.

**STUDENT C:**

RAZGOVOR 1:

P: Lučko tower, 9ADAS, request startup for local VFR flight.

C: 9ADAS, Lučko tower, startup approved, QNH 1024.

P: startup approved, QNH 1024, 9ADAS.

RAZGOVOR 2:

P: 9ADAS, ready to taxi.

C: 9ADAS, taxi to holding point.

P: 9ADAS, say again, you were cut off.

C: 9ADAS, taxi to holding point E 28L.

P: taxiing to holding point E RWY 28L, 9ADAS.

RAZGOVOR 3:

P: 9ADAS, ready to copy ATC clearance.

C: 9ADAS, cleared local flight VFR, 2000ft, when airborne left turn W1 point, SQUAWK 3641.

P: cleared for VFR flight, 2000ft, when airborne to turn left inbound W1, SQUAWK 3641.

C: 9ADAS, correct, report ready for departure.

P: 9ADAS, wilco.

Ispravak:

P: cleared local VFR flight, 2000ft, when airborne to turn left inbound W1, SQUAWK 3641.

RAZGOVOR 4:

P: 9ADAS, ready for departure.

C: 9ADAS, cleared for takeoff RWY 28L, wind 180/3kt.

P: cleared for takeoff 28L, 9ADAS.

Ispravak:



P: RWY 28L, cleared for takeoff, 9ADAS.

RAZGOVOR 5:

C: 9AS, Zagreb radar 120.7.

P: 120.7, 9ADAS.

RAZGOVOR 6:

P: Lučko tower, 9ADAS, W1, 1000ft AGL, inbound Lučko for touch and go.

C: 9ADAS, Lučko tower, report H4, QNH 1024, expect holding due to parachute drop zone.

P: wilco, am, (~~correction~~), 9ADAS, say again.

C: 9ADAS, QNH 1024, report H4, you may expect expect holding due parachute dropping zone overhead Lučko.

P: wilco, QNH 1024, roger, 9ADAS.

Ispravak:

P: wilco, am, correction, 9ADAS, say again.

C: 9ADAS, QNH 1024, report H4, you may expect expect holding due parachute dropping zone overhead Lučko.

P: QNH 1024, wilco, roger, 9ADAS.

RAZGOVOR 7:

P: 9ADAS, H4, 1000ft AGL.

C: 9ADAS, orbit overhead H4, call you back for approach.

P: orbiting overhead H4, 9ADAS.

RAZGOVOR 8:

C: 9ADAS, join left downwind for RWY 28L and report.

P: to join left hand downwind RWY 28L, wilco, 9ADAS.

RAZGOVOR 9:

P: 9ADAS, on left hand downwind RWY 28L, for landing.

C: 9AS, report final RWY 28L.

P: 9ADAS, wilco.

RAZGOVOR 10:

C: 9AS, cleared to land 28L, wind 190/4kt.

P: cleared to land 28L, 9ADAS.

Ispravak:

P: RWY 28L, cleared to land, 9ADAS.

RAZGOVOR 11:

C: 9AS, via D taxi to the apron.

P: (~~vacating via D~~), taxiing to the apron, 9AS.

Ispravak:

P: vacating via D, taxiing to the apron, 9AS.

RAZGOVOR 12:

P: 9AS, engine shutdown.

C: 9AS, roger.

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Student/ica:

U Zagrebu, 07.9.2023.

  
\_\_\_\_\_  
Davor Žulj

(ime i prezime, potpis)